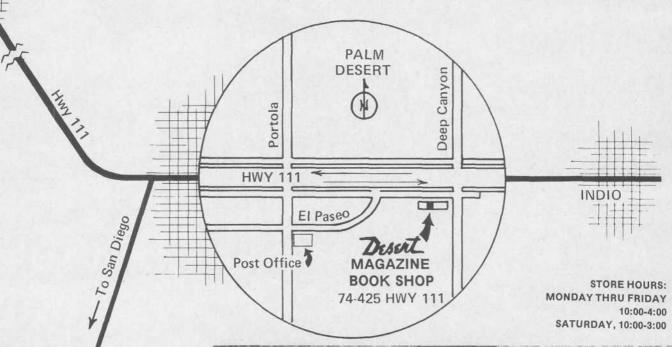


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Barrel Cactus Blooms and Ajo Mountains, Organ Pipe Cacus National Monument, Arizona. Summer brings the Ferocactus Clovillei this brilliant crown of blossoms to grace the desert at the foot of this rugged range. Photo by Josef Muench, Santa Barbara California.

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A Peek in the Publisher's Poke

T IS our objective each month to present the Southwest in such a manner as to whet your appetite to personally visit and experience new areas of awareness. This month's offerings should do just that. In fact, a few will make you downright hungry!

Stella Hughes, author of Chuck Wagon Cookin', brings a real western flavor to our pages with her column, "What's Cooking on the Desert?" Her topic for May is jerky, that wonderful dried meat treat. I think you will enjoy her down-to-earth style as much as her recipes.

Travel in the desert is mostly a pleasure, being blessed with clear skies and lots of sunshine. But if clouds do appear, they could be bringing a message. Be sure to check out Richard Bauman's informative article, "You Can Predict the Weather." He explains the basic cloud formations and what they foretell in hopes that a happy trip is not turned into a disappointment or tragedy.

A really off-the-beaten-track hike, taken by author Roger Mitchell into Hite's Cove, sounds like a fun trip into the past. Roger, whose books on Jeep trails in the West have been steady sellers for years, likes to find unusual and historic areas for our readers to visit. Hite's Cove is located in the beautiful Mother Lode country.

The past and present are brought together in three articles in this issue. Joe Kraus elaborates on "The Old Forts of Nevada"; William Harrison explains the rise and fall of "Silver Reef" in Utah, and Howard Neal tells us how it was with words and how it is with photos in the ghost town of "Dayton, Nevada."

Bill Jennings brings us a rundown on the little-known "Malki Museum's Memor-

ial Day Fiesta." The Museum is located near Banning, California and the various Indian tribes participating are doing so in hopes of preserving the old traditions, the highlight of which is a mouth-watering beef barbecue. And, as Bill says, there's nothing quite like it this side of the July 4th Flagstaff Pow Wow.

Naturalist K. L. Boynton enlightens us about the desert nighthawk, a strange bird, indeed, that lays its eggs on the ground for an instant nest, while Lucile Weight explains the uses of galleta, the perennial bunch grass, and the part it played in the exploratory days of the West.

Rounding out the issue, Dick Bloomquist delivers the 18th in his fine series on Palm Oases in Southern California with a visit to Four Palm Spring.

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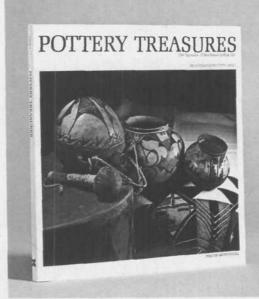
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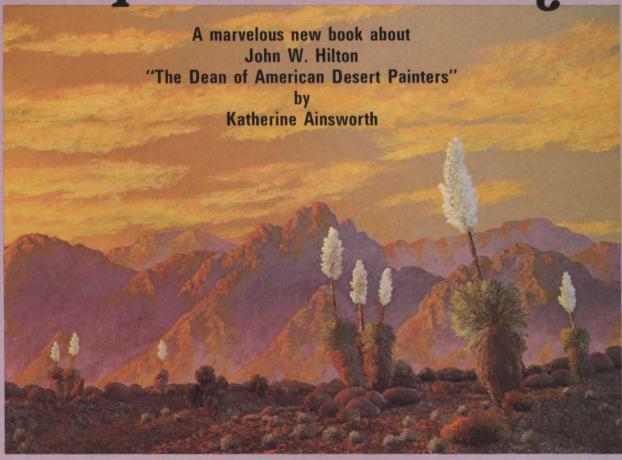


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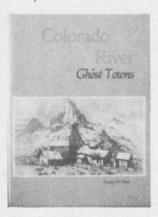
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Don Holm's Book of FOOD DRYING, PICKLING AND SMOKE CURING

By Don and Myrtle Holm

Even before the energy crunch and the spectre of waste in a world of shrinking food supplies, people were instinctively turning to more economical, efficient and wholesome ways of processing foods at home. Some of this has to do with nostalgia, and a feeling that some of the old ways were just as good if not better than newfangled 'improvements,' especially where food and the home budget are concerned.

That's how this new cookbook by Don and Myrtle Holm came about—once again filling a deep need, not only for the

outdoors and wilderness cooks, but also for the homemaker, at a minimum cost.

Many of the recipes and processes in the book were from family collections; others were picked up over the years in travels about the West; and some came from the food science departments of several leading land grant colleges.

In the experience of the authors, the three main divisions of the book—food drying, pickling and smoke cooking—naturally come together as related activities, and usually during the harvest season.

Here, for the first time in print, is a complete manual for all three basic methods of food processing and preservation without refrigeration or expensive canning equipment.

You will not only get all the information needed to quickly learn these ancient arts of food preservation, but instructions and plans for building the equipment needed at home.

FOOD DRYING will show you how you can dehydrate practically any form of food into easily stored, nutritious and inexpensive products that will keep indefinitely and yet be easily reconstituted without loss of food value. Not only is this convenient and wholesome, but in many cases—such as with dried bananas and pears, pineapples, for example—the result is a whole new and incredible delicious product.

PICKLING revives another ancient art, which is seldom practiced or enjoyed by modern homemakers, but which is just as simple, if not simpler than food drying. Again, almost anything in the food line lends itself to pickling; especially vegetables, fruits and fish. Until one has tried the result of home pickling, as described in the Holms' new book, one has not really tasted heavenly delights.

SMOKE CURING is another increasingly popular home food processing activity—especially now with the availability of small, efficient and inexpensive home food smokers. Many anglers, for example, now seldom eat fresh cooked fish, much preferring the smoked or pickled product.

The Holms bring together in this book all of the latest and most practical techniques for home smoking, along with the old tried and proven ways—including plans for building several different smokers at home.



As in their other cookbooks, the Holms give you good sound practical information served up with delightful anecdotes and a special brand of humor that makes for good easy reading, even without the cooking.

Don Holm's Book of Food Drying, Pickling and Smoke Curing is top notch fare for the homemaker, the camp cook or the expedition leader.

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Dowler's LAKE POWELL BOAT AND TOUR GUIDE

This Revised Third Edition is a must for boaters and non-boaters alike, tourists and tour-takers, active outdoorspersons and/or just relaxers, who plan to visit the Glen Canyon National Recreation Area of Arizona-Utah. Detailed maps based on USGS topos give canyon ratings for angling, camping and houseboating, photography and walking-hiking. Marina tourist facilities, plus places of historical, scientific or recreational interest are given. Both marine and auto mileage tables, helps and hints, and other pertinent data are included.

The geology, flora and all areas described are illustrated with beautiful four-color photos. The excellent maps start at the Wahweap Area (Mile 0) and lead you mile by mile through the areas of Padre Bay, Navajo Canyon, Rock Creek, Rainbow, Great Bend, Piute Farms, Escalante River, Iceberg, Bullfrog, Moki, Good Hope Bay, Hite and Cataract.

In addition to Boating Rules at Lake Powell, the Dowlers have included important information on houseboats, as well as driving and docking a boat. All in all, a valuable guide for both the experienced and novice visitor to this "curious ensemble of wonderful features—carved walls, royal arches, glens, alcove guiches, mounds and monuments."

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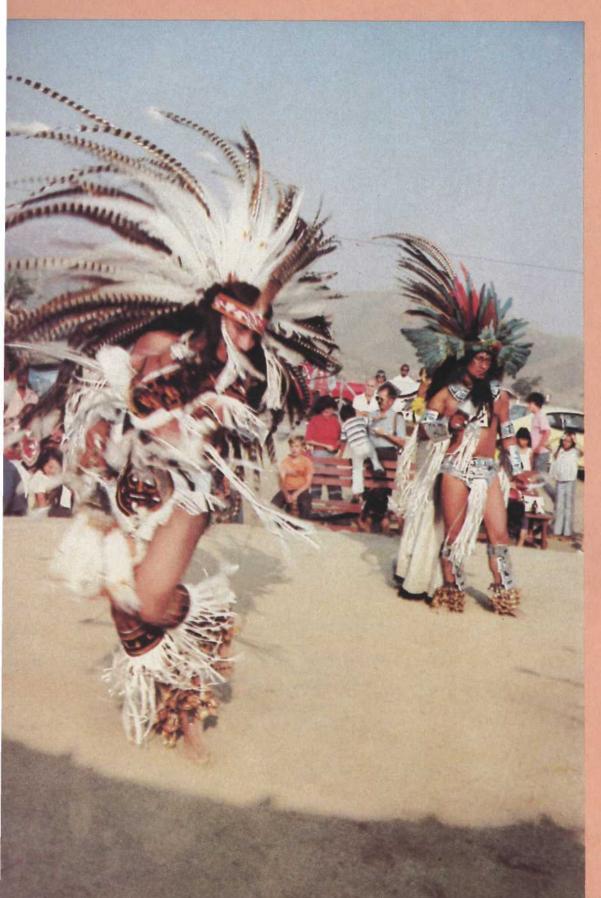
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MALKI MEMORIAL



by BILL JENNINGS

NCE EACH year, over the Memorial Day weekend, a small enterprise undertakes a very large, almost impossible project, which in turn attracts a disproportionately hugh audience.

The event in question: the Malki Museum Memorial Day Fiesta, occurring this year on Sunday, May 28, beginning at 11 a.m. with a simple but emotional flag ceremony honoring Indians who have died in the service of their country. It will continue far into the night.

With any kind of recruiting luck, perhaps 50 to 60 members out of the 700 people on the books of the Malki Museum Association will actively help out—aided by at least that number of volunteers who like to get involved in the annual maelstrom that passes for the preparation phase of the big event. Attendance, on the other hand, may run as high as 10,000.

Part of the reason for the crowd of course is Malki's location, on Fields

DAY FIESTA

Road in the heart of the 33,000-acre Morongo Indian Reservation, just a mile north of Interstate 10, some 20 miles northwest of Palm Springs. Another part is the event's reputation for excellence, earned with a superlative Indian-style beef barbecue served each year since 1966 and impromptu but highly spectacular Indian-style entertainment.

Whatever the attraction, Malki's hard-working volunteers are willing to put their hearts, muscles and money into the preparation because the Fiesta serves an unusual function for all participants—tradition and an annual get-together for Southern California's growing Indian population, publicity for the museum and just plain fun for visitors. There's nothing else quite like it this side of Flagstaff, Arizona, where the annual July 4th Pow Wow is the major event of the southwestern Indian world.

The Malki Fiesta is the major fundraising event for the tiny museum, the only one of its kind in Southern California. There are other Indian-oriented museums to be sure, but Malki is the only one conceived and run by Indians, with the white people who are involved serving in advisory and "grunt labor" roles only.

Malki's 1,000-square-foot adobe building is the star attraction of the day, for many, but for perhaps 2,000 visitors the big event has to be Cliff Mathews' pit barbecue, prepared in the way the Morongo member learned from his famous Pass Cahuilla father, Henry Mathews, whose barbecues were a Southern California tradition for several decades.

For others, of course, the big attraction is the stellar entertainment, presided over in the past few years by Iron Eyes Cody, famed film performer, and arranged by Margaret Martinez, noted Indian jewelry maker and a member of Malki's governing board. Participants include many professionals of the film world who donate their services in return for a heaping plate of the barbecue and perhaps gas money. Others are local Indians who aren't really entertaining for

Matt Pablo, for several years now the construction superintendent for the Malki Museum's Memorial Day weekend fiesta, shows a rare smile as his crew works. Opposite page: Dancer in action. Color photo by Weezy Wold.



Iron Eyes Cody, left, noted Indian entertainer and master of ceremonies for the Malki Indian Fiesta, introduces a member of the Azteca Dancers, an unusual troupe of Mexican and American Indian entertainers who wear Aztec-style costumes.



the average visitor at all, but rather for each other to keep the dying traditions of ceremonials and birdsongs alive.

And there are groups from several adjoining states, as far as Las Cruces, New Mexico, or Phoenix, Arizona, who come because they love the surroundings, want to share their culture or just wanted an excuse to visit Disneyland or Knott's Berry Farm and Malki is on their way.

For the Indian people of Southern California, primarily the Cahuilla, the Serrano, the Luiseno, Diegueno and the Chemehuevi, the Malki Fiesta represents an effort to revive and sustain the ages-old tradition of fiesta which had fallen into neglect before the little museum was spawned on the windswept plateau of the historic Malki village site of a little more than a decade ago.

Some, including Indians, would dispute Malki's role in reviving an ancient custom which got its name from the Spanish conquerers 200 years ago but is a way of life dating much earlier. They point out that the Pala and Santa Ysabel missions' fiestas have a much longer history than the Malki. True, but those are church-oriented events while the museum is non-sectarian and run by the Indians themselves.

When the first Malki committee staged the enormously successful revival in 1965, Emmett St. Marie, then the Morongo tribal spokesman, was general chairman. His committee—which made up most of the work force—was part Indian and part White, with a big boost

from employees of Lockheed Propulsion Corporation, which then operated a plant for rocket motors at Mentone and a huge testing base in Potrero, an historic Indian site just south of nearby Beaumont.

The first fiesta drew perhaps 5,000 curious visitors, and a good many of them Indians who were really curious to see if the "Melkish," a Cahuilla word for white people, could put on a good show. They saw their own people involved, not only involved, but in charge, with the whites doing a lot of grunt effort. Malki's success was assured, that switch in the traditional roles of Indian and White was worth the long drive for many of them, and the Mathews' barbecue hooked the non-Indian visitors. That initial success led to similar fiestas organized at the Santa Rosa (Cahuilla) Reservation and, later, at the Torres-Martinez Reservation, also a Cahuilla stronghold. Still later, the famous Soboba Fiesta was revived near San Jacinto, but that effort did not necessarily stem from Malki's

Both Santa Rosa, located high in the Santa Rosa Mountains above Palm Springs, and Torres-Martinez, near the Salton Sea, share common heritage with Morongo and their leaders often have served on the Malki board of directors so the link was strong.

Malki is a state-sanctioned non-profit corporation, which means of course contributions are tax-deductible, but more importantly for the handful of people

Eugene Pablo, president of the Malki Museum Association, gathers a load of palm fronds to re-thatch walls and roofs of the ramada shelters at the annual Malki Museum Memorial Day Fiesta. In background, at right, is Tom Lyons, elected spokesman of the Morongo Indian Reservation. Below: This unusual group, La Canza de La Mision de San Jose, from Las Cruces, New Mexico, is depicting old Catholic and Indian rituals.



involved, it means two boards. One, the corporation board, is made up of permanent appointees, headed since the beginning by Katherine Siva Saubel, a Cahuilla from the remote Los Coyotes Reservation near Warner Springs in San Diego County.

The association board, which directly represents the 700-plus membership and is responsible for raising money to keep the little museum going, has been headed, traditionally, by a Cahuilla. At present, the leader is Eugene Pablo, nephew of the museum's founder and longtime director, Jane K. Penn.

Other officers and members are just about evenly divided Indian and non-Indian, all bound by Malki's original and still unswerving goal—strengthening the ties between the races through greater cultural understanding and interchange.

The fiesta grounds are the heart of the two-acre Malki museum compound which surrounds the little building. A Ushaped grouping of ramada shelters form the other sides of the square with the adobe building to the west. A stage composed of sand over decomposed granite held in place by several hundred worn-out railroad ties is the centerpiece.

Ramadas are rented to profit-making groups, ranging from Indian family-





owned restaurants and gift stands to arts and crafts displays and game booths. Free booth space has traditionally gone to Indian organizations, such as tribal softball teams, volunteer fire departments, school clubs and service agencies.

Each spring, after the general winter rains, occasional snow and frequent windstorms, the volunteers rebuild at least part of the ramada ring. This year, as funds have permitted, they have enlarged the stage, added new, peeledpine pole rafters and, as always, replaced the roofs and walls of native fan palms and "imported" date palm fronds from the Coachella Valley.

Some booth occupants bring their own materials, delicately scented sage and pungent arrowweed from the desert and mountain homelands of the Cahuilla. Willow roofs, depending on the plentitude of winter rains, grace many of the

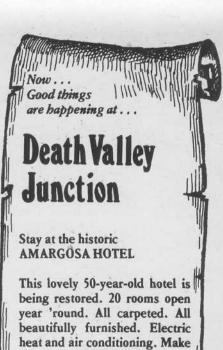
First time visitors, particularly, sometimes are surprised, even unhappy with the lack of formal welcome at the fiesta. This isn't typical of Indian hospitality, merely evidence of the puny size of the "committee" which is cutting meat, trying to get ahead of the mountain of garbage and trash, pouring coffee, making tortilla roles or fry bread, selling books, servicing the restrooms or even trying to make some order out of the chaotic parking lot.

Guests have been pressed into service when they complain about some of the problems and for the most part guests, Indian or non-Indian, have become as much a part of the committee, and the entertainment, as everyone else.

Daytime activities, such as the barbecue and the Hollywood-oriented dancing, are primarily for the tourists, the uninitiated. But the true Indian flavor of the fiesta emerges at dusk when the benches are bunched along the adobe wall, firewood is gathered and the traditional Southern California Indian singing

Knowledgeable whites stand in the background, occasionally joining in the dancing, on request. Rattles are the principal rhythm for the softly-chanted songs which may go on all night.

This is the Malki Fiesta, a blend of old and new, Indian and White, a unique experience for some first-timers, but a step into the beloved past for many others. Even the tired committee members join in. As the privately financed museum it supports, the Fiesta is made up of love.



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Hiking Into Hite's Cove

by ROGER MITCHELL

UCH HAS been written about the gold camps along California's 200mile-long "Mother Lode" belt. Researchers, historical societies, and the descendants of the 49ers have preserved and produced a wealth of information about such camps as Grass Valley, Angels Camp and Jackson. When you visit these historic places today, you can drive there in the air-conditioned comfort of your car, you can find guidebooks or descriptive signs to point out historic points of interest, and in some cases, like at Plumas-Eureka, Malakoff Diggins, and Columbia, State Park Rangers will give you a guided tour.

But the old mining camp of Hite's Cove is not like that. You cannot drive there. You won't find any descriptive signs, much less a guidebook, and there certainly won't be any guided tours. Hite's Cove offers none of those amenities. Yet it does occupy an historic moment in the history of the west, albeit a small one overlooked by most historians and authors of ghost town guidebooks. Hite's Cove is certainly off the beaten path, and this, perhaps, is reason enough to go there. There probably won't be anyone else on your block who



can say he has been to Hite's Cove!

Hite's Cove is situated on the South Fork of the Merced River on the western flank of the Sierra Nevada in Mariposa County. To reach the jumping-off place, take State Route 140 through Mariposa going east towards the El Portal entrance to Yosemite National Park. After reaching Midpines Summit, the highway will drop some 1800 feet to the bottom of the Merced River Canyon. The road then follows the river upstream. In a little over nine miles from Briceburg, where the road first joins the river, a bridge is crossed. Here the South Fork of the Merced River flows into the main river. Here, too, is the historic site of the old Savage Trading Post, and the start of the trail into Hite's Cove. There is ample off-road parking for hikers. The Forest Service requests that hikers sign in and out in the trail register located inside the store.

There is a sign in front of the trading post which reads:

'Here in 1849 James D. Savage established a store built of logs. He engaged in trading and mining and married several squaws for protection and influence. In spring of 1850, fearing Indian depredations,

Opposite page: Rock walled building in Hite's Cove. Above: Author stands by gyratory crushers. Below: South fork of Merced River on the trail to Hite's Cove.





Hiker inspects an old safe near Hite's Cove.

he moved to Mariposa Creek. In December his store and others were pillaged and burned and the real war began. A volunteer battalion was formed and Savage elected Major. In pursuit of the most warlike tribe, their secret hide-out, Yosemite Valley was discovered, and the war brought to a quick end.

"Major Savage was killed by a political opponent, August 1852. Years later one of his widows guided John Hite, a poor prospector, a few miles up this South Fork to discover a gold mine that made him a millionaire."

A Forest Service sign points the way up a short dirt road to the trail. The sign indicates Hite's Cove is five miles. The distance is actually closer to four miles. The trail follows the north side of the river upstream, contouring along the steep hillside a short distance above the canyon bottom. It is an easy hike through a mixed forest of oaks and pines. If you happen to be there after a spring rain, keep your eyes open for a California newt crawling across he trail. These harmless, slow-moving lizard-like creatures are not reptiles, but amphibians. They have a rubber-looking, reddishbrown skin and are abundant in the area. They are most often seen in the winter or spring, however.

After a couple of miles the trail descends to the canyon bottom where the river makes a sharp turn. There is an unimproved campsite here, on a sandy bar, sometimes used by fishermen. As you hike through the canyon, notice the highly metamorphosed rock formations. These are among the oldest rocks of the Sierra, here long before the present mountain range was pushed up. At one time these rocks were flat lying strata, deposited as sediments in the bottom on the sea over millions of years. When the igneous rocks of the Sierra Nevada batholith pushed their way up from deep within the Earth, the new molten rocks pushed these older marine sediments up and out of the way. Those sediments which were not simply dissolved in the batholith, were considerably altered by heat and pressure. What was once layered sandstone and shale, is now schist, slate, quartzite, and hornfels, often twisted and contorted and thrust up at a high angle. These rocks, now metamorphosed, were then intruded by hot mineral-bearing solutions which filled the cracks and cavities leaving dikes and veins. Some of these solutions contained the gold that Hite discovered.

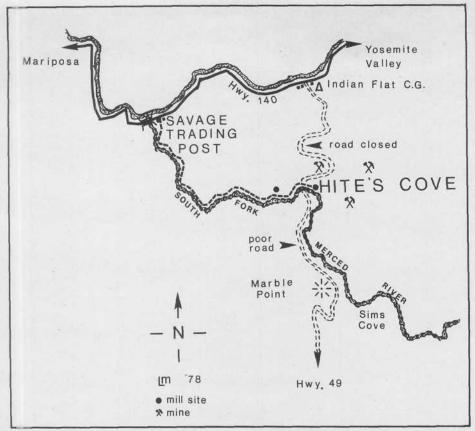
The trail continues up the canyon. In a little more than a mile, a wide sandy bench is found perched high above the river. This is not river sand, but finely ground waste rock which once went through the ore mill to have the gold removed. If you look among the trees back towards the hillside you can find some of the mill machinery lying in ruin. The four large iron devices, which resemble washing machines, are gyrotory rock crushers. Nearby is another nice, but unimproved campsite.

Hite's Cove is another half-mile upstream. You can recognize the site by the many rock walls lying in various stages of ruin spread out over a half mile. Most of the buildings were destroyed in a forest fire in 1924. All that remains today are these rock walls and

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an abundance of rusting iron machinery which came from the stamp mill.

According to the noted California historian, the late Professor Edwin Gudde of the University of California, Hite's Cove was discovered in 1862 when an Indian woman led John R. Hite up the canyon to the place where she had seen a promising quartz outcrop. There was free gold in the vein and Hite staked his claims. He didn't have much capital to work with at first, so he crushed the ore with a crude arrastra. This was followed by a more efficient stamp mill in 1866. The annual Mining Review, edition of 1876, says a bigger 20 stamp mill had been installed at Hite's Cove in 1874. The total production at Hite's Cove is estimated at three million dollars, an incredible sum in looking at the site today. The quartz veins of Hite's Cove, and some were up to 12 feet thick, were good to John Hite. His story is one of rags to riches. Not the usual fate for many sourdoughs of his era.

In the early part of the 20th Century, interest in the Hite's Cove area was renewed. The miners built a road into the canyon coming in from the south through Darrah and Jerseydale. The river was spanned with a suspension bridge and the road crossed not only the river, but Pinoche Ridge to the north to connect with Indian Flat, across the

river, and a little upstream from the famous Clearinghouse Mine. The road is still there today, but it is closed by locked gates at the north end, and while the south end is rough but passable, it is often hazardous to cross the river except during the fall or late summer months. It is much more practical to get into Hite's Cove by the hiking trail.

The trail ends at Hite's Cove but it is usually possible to continue upstream along the river bank. Sim's Cove is about two miles above Hite's Cove and a mile above that, you can pick up an old prospector's trail that goes even farther up the river to some diggings near Peach Tree Bar. The entire 10-mile-section of river from the Savage Trading Post to Peach Tree Bar is only 1500 to 2000 feet in elevation so it can be explored anytime, even in the middle of winter. In fact, winter or early spring is probably the best time to visit Hite's Cove. Summer can be quite warm in the canyon and while there is not much poison oak to be encountered along the trail, it is most bothersome then. Winter and spring are often delightful, particularly when the wildflowers begin to make their annual appearance in the Sierra foothills.

But whenever you choose to visit Hite's Cove, the easy trek in promises to be a rewarding experience which you will long remember.



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OLD FORTS

by JOE KRAUS

Fort Churchill
was established
because of the Paiute
Indian uprising in
western Nevada.
During the 1865
Indian War almost the
entire garrison was
in the field supporting
three separate
expeditions.

OF NEWADA

EVADA HAS had a very turbulent history. It's filled with Indian and white skirmishes, gold and silver strikes, boom towns, stagecoach and train robberies, cattle rustlers, even shootouts in the streets. There were political problems, range wars, hassles over water rights—just about everything you would expect in the western frontier region at that time.

When the military moved in, the reason was to protect the miners and settlers from the Indians. But after they constructed their forts and sent out patrols they found that the Indians were much easier to handle than the whites.

As law and order were not all that well established at the time, the military had to keep the peace as much as it could. But even that wasn't the real problem. It was the gambling halls, saloons and ladies of the evening which crowded in from all around. As a result the soldiers had

little time to think about anything else.

In Nevada, however, you don't have to just read about this fascinating history — you can live it. For there is much evidence of those early years. And in the center of it all are the state's military posts. Here's what you will find:

GENOA STOCKADE

Genoa, Nevada's oldest settlement, is located some 15 miles southwest of Carson City. It was never really a fort in the true sense of the word. Although the stockade was originally constructed to keep out marauding Indians, both soldiers and Indian battles were elsewhere.

Genoa did serve, however, as a supply point for pioneers heading for the California gold fields. And with the outrageous prices being charged for supplies, it was rumored that the stockade was really built to keep out irate customers. Nevertheless there was a fort in Genoa. And although the original doesn't stand today (it burned down years ago), a reconstructed fort does. The inner yard doubles as a park and picnic area and the building as a museum.

It was from Genoa that the famous Snowshoe Thompson made his dead of winter mail runs. With 80 pounds of mail on his back he traveled the back country on eight-day round-trips to Placerville, California. His pay wasn't in money but in the hearty thanks of the burly miners.

It was also in Genoa that local boy George Washington Ferris stared one day at an irrigation wagon wheel. An idea struck him that reshaped the entertainment industry. Introduced to the world was the famous Ferris Wheel.

Mormons were the original settlers in





The Genoa Stockade, once known as Mormon Station, is located some 15 miles sputhwest of Carson City. Genoa served as a supply point for pioneers heading for the California gold fields.

the area. But when they were called by Brigham Young back to help defend Salt Lake City from an irritating United States Army, the lands in Genoa were seized by unscrupulous settlers. As a result of this, Orson Hyde, an apostle in the church and former head of the colony at Genoa, left a prophesy to the squatters. "The people will be visited with thunder and with earthquake, and with floods, with pestilence and with famine until your names are not known among men."

The warning was nearly forgotten until the town was almost wiped out by fire on two different occasions. Later, tons of snow thundered down from the mountains crushing houses, barns and people. The destruction was so complete that the exact number of dead could not be determined.

Today, many of the descendants of those early squatters have been converted to Mormonism. Church members are back in Genoa and in Nevada. There are no more curses.

FORT BAKER

There isn't much left to old Fort Baker. It's been hemmed in by the Elks Lodge on one side and two major highways on the other. And just down the way are the bright lights of Glitter Gulch—Las Vegas's main street. But there is no other fort in Nevada with more memories for this writer than Fort Baker. For it was here as a boy in the mid-1950s

that I delivered the morning newspaper, the Las Vegas Sun.

Fort Baker was almost out of town then. For in those days you could throw a rock in any direction and hit nothing but open desert. It was always a pleasant stop after a long bicycle journey in those often chilly, just-after-dawn hours. The fence and the protective roof wasn't there then. It was just an old adobe in which lived some very friendly people.

Since then there were moves to Oregon and then to California. But wherever home was at the time, there was always that memory of Fort Baker, an island oasis in the city. Today a visit to Las Vegas isn't complete without a drive to that favorite spot, to peek into a window or to stand once again under the old cottonwood trees.

Historically, the fort was not all that important. Built by Mormon pioneers in 1855, it served mostly as a halfway station between Utah and California settlements. Although it was originally built to protect the locals from Indians, it never saw any battles. From the beginning the Mormons and the Indians were at peace, each helping the other. Later the military occupied the fort when the Overland Mail stages included it on frequent stops.

Although the original fort had several adobe buildings and was completely surrounded by a 10-foot adobe wall, only one of its original buildings withstood the years. Recently, however, the State of Nevada, the City of Las Vegas and the federal government signed an agreement whereby the old fort would be restored.

FORT CHURCHILL

Of all the old military posts in Nevada, probably the most interesting for visitors is Fort Churchill. It is located along a branch of the Emigrant Trail just off Alternate U.S. 95, about eight miles south of Silver Springs.

An historic state monument, Fort Churchill was built in 1860 and abandoned just 10 years later in 1870. During that time, however, it was a fully operating U. S. Army Fort and Pony Express Station.

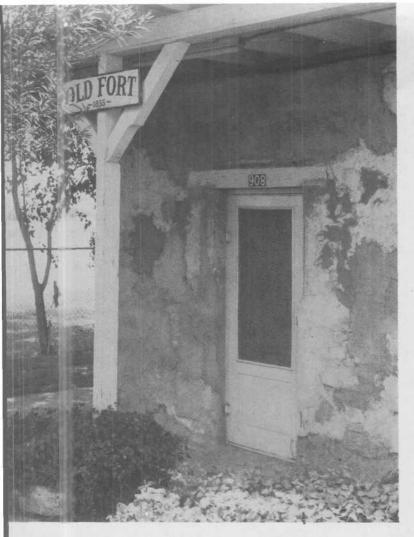
As Nevada's largest fort, Churchill was established because of Paiute Indian uprising in western Nevada. The soldiers from the fort engaged in numerous Indian battles. During the 1865 Indian War almost the entire garrison was in the field supporting three separate expeditions. The Indians and soldiers traded defeats in those years until finally the soldiers won out.

In addition to its concern over Indians, the fort served as a main supply depot for the Nevada Military District during the Civil War. It became a base for troops patrolling the state. Soldiers were also dispatched in various directions patrolling the overland roads and providing protection for the Pony Express.

Today, not only can you walk along and in between the various buildings at the fort, but take advantage of a visitor's center, provided by the Nevada State Parks Department. In the visitor's center are various displays, literature and plaques commemorating the historical significance of the old fort.

Nearby is an old cemetery in which are the remains of Samuel Buckland and his family. Buckland operated a trading post one mile from the fort in which he provided refreshments and entertainment for off-duty troopers. Soldiers from the fort were also buried in the cemetery, but when the post was abandoned, the graves were dug up and the soldiers reburied in cemeteries in Carson City and San Francisco.

The ruins of the fort, itself, are most picturesque. The adobe walls, right out of a John Wayne western, still have a great deal of the romance in them. Crumbling though the walls are, one can



Only one building remains at old Fort Baker, now in the heart of Las Vegas. A restoration project is under way.

can get a real feeling of what life must have been like there.

OTHER FORTS

Among some of Nevada's other fort sites are Fort McDermitt, some 96 miles north of Winnemucca on the McDermitt Indian Reservation. Named after Colonel Charles McDermit, killed by Indians, the fort was established in 1879. Its purpose was to protect settlers and travelers on the Nevada-Idaho road. Only a couple of the original buildings remain and they have been reconditioned for use as structures on the reservation.

There is little evidence left of Camp Ruby, a small Army post some 65 miles from Elko on Route 65. Ruby, not a very permanent fort, was active only seven years. Its men, however, did see a great deal of Indian fighting. They even rescued from the Indians a small boy who had been held captive for two years.

Only a marker indicates the site of Fort Halleck, several miles east of Elko on U. S. 40. Halleck was established in 1867 by two companies of the 8th Cavalry. Here soldiers kept busy protecting the rail, telegraph and stage lines. It was abandoned in 1886.

Camp Dun Glen has almost vanished as well. It is located on private property some 35 miles south of Winnemucca on U.S. 40-95. All that remains there are some foundation stones of an old mill, not really a part of the fort.

Camp Winfield Scott is located just outside of the town of Paradise Valley, some 40 miles northeast of Winnemucca. Two officers quarters and a single barracks building remain, but all are in use as part of a private ranch. All buildings were built of adobe with sod roofs.

Established in 1866 and named for Lieutenant General Winfield Scott, the post lasted for a little over four years. Its function was to keep the local Indians under control but it seemed to have more problems with the whites, gamblers and whisky runners who had close attachments to the troopers.

A military reservation was created near the town of Carlin. But it existed more on paper than in actual buildings or manpower. It was abandoned in the same way. There was little more to Fort Haven, more a temporary earthwork than anything. Located on the Truckee River near Pyramid Lake, it served only as cover in the war with the Paiute Indians. Other temporary posts were Storey, McGarry and Schellbourne, all lost now to time and the elements.

For soldiers, the Nevada experience was either too hot or too cold. They were torn between wanting to fight Indians and to join the Union cause in the Civil War. And as Indians were often cruel in their treatment of white settlers, so were the soldiers often cruel in their unmerciful attacks on Indian camps. It was a time of different values and judgments. History, though it is, it should not be forgotten.



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Walking Rocks in Canyonlands

IGHTHAWKS SOJOURNING in the western deserts come in two main styles with various subspecies. The particular kind flourishing in a given area depends on its location: the "common" nighthawk type — Chordeiles minor — operating more in the northern deserts of the Great Basin, while the C acutipennis or "lesser" nighthawk group works the southern regions.

These are good-sized birds, some eight to nine inches in length, their soft plumage colored in somber browns, greys and sand, stippled and streaked and blotched with darker tones. Their bills are small, but their mouths are big and broad, cavern-like when opened in an enormous gape. Their feet, small and weak, are no good for perching or for much walking on the ground.

Nighthawks are of keen interest to bird specialists mainly because these big-mouthed birds with the razzle-dazzle camouflage feathers are so off-beat physiologically and behavior-wise. Being members of the Goatsucker clan, they come by it naturally, their relatives the oil birds, frogmouths, potoos and poorwills likewise causing many a furrow in the old scientific brow for the same reasons.

By trade, nighthawks are aerial feeders, catching insects in flight. This is fair enough since what with their speedy maneuverable flight and basket mouths they are built for it. They forage during the crepuscular hours of dusk and predawn, which in the desert is sensible, to be sure. But this is their only concession to desert living. In fact, it would seem sometimes that they don't know they are living in a desert. Take, for instance, their penchant for family raising under just about the worst conditions they could pick.

Why Mrs. Nighthawk wants to set up housekeeping out in the open with no protection from the blazing sun or night cold and wind and where the nearest water may be miles away, nobody knows. Her idea of how to do the job right consists of selecting a spot on the bare, hard ground, preferably where there is rough gravel and small stones lying about. A dry river bed is about ideal. Nest making consists of doing nothing at all. Once the spot has been decided upon, she simply squats down and, fluffing out her feathers, is on her nest.

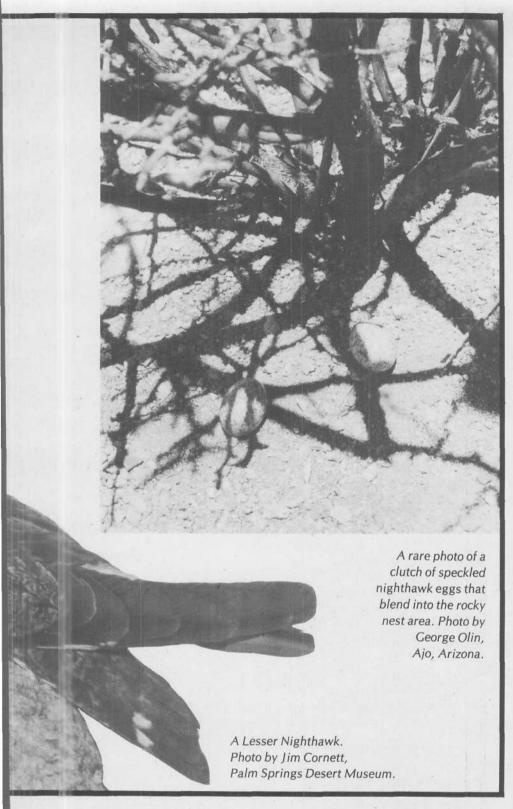
DESERT Nighthawk

by K. L. BOYNTON ©1978

Now this may seem a fine example of bird-lib. Actually what she nets from this odd-ball real estate choice and work avoidance is a double trouble problem. First, with no nest protection, the eggs obviously have to be shielded from the day's heat which means that somebody has got to be the umbrella. Since Mr. Nighthawk appears to draw the line at incubating, she's IT. So, there she is, stuck with the sitting job with the desert

sun beating down on her hour after hour, day after day during the tedious 18-19 day incubation period.

Not only does she make the job of egg sitting more difficult and the results chancier, she creates at the same time a situation fraught with danger to herself. She is constantly in full view of predators, bad enough, but worse, she has subjected herself to prolonged exposure to high heat and intense solar radiation.



And, as all hands know, a bird that stores too much heat is bound to end up a very dead one.

To be sure she can hold her wings away from her body exposing her thinly feathered sides and unload some heat here, and can flatten her plumage to cut its heat holding value. These methods are effective for a while, but fail as the day's temperature keeps climbing. Only evaporative cooling can save her.

Now birds don't have sweat glands, so evaporation takes place from the moist lining of their respiratory tract, and here the nighthawk, being a member of the feathered tribe, has an advantage over her furred neighbors. Birds, it seems, in addition to the usual respiratory parts found in mammals (windpipe, bronchial tubes and lungs) also have a series of large air sacs which are connected to their lungs. These thin-walled cham-

bers, located fore and aft in their body cavity, collect warm moist air from over-heated muscles and internal tissues and pass it along to the lungs to be expelled directly to the outside. With this supplementary system in action, birds practically have an air-cooled body.

Increasing the breathing rate speeds up the heat unloading action, but takes energy. Panting, for example, while working to rid the body of excess heat, creates heat in the process, and any addition lessens the efficiency of the cooling system. Nighthawks avoid costly panting; they simply flutter the membranes of the forepart of their throats. This fluttering motion expels heat quickly and by greatly increasing the flow of air over the moist surfaces of their big wide mouths, functions as a first rate evaporative cooling mechanism. Economical, this "gular fluttering" is produced by rapid movements of the hyoid apparatus, a bony structure that supports the tongue and upper throat. Its timing runs about 500-690 per minute which corresponds to the specific resonant frequency of the gular system itself. Hence it takes very little energy to operate. Anatomists W.R. Dawson and G.A. Bartholomew found, for example, that even when the bird uses it constantly at air temperatures of 43C (109.4F), the cost runs less than 20 percent of the heat being dissipated by evaporation. In fact, so efficient is this cooling system that a nighthawk can unload nearly two times as many calories as it produces even when the temperature hits 45C (113F).

Not that gular fluttering is the only ace Mrs. N. has under her wing for dealing with the desert's heat. Zoologist M.W. Weller's big study of a nesting nighthawk, for instance, gives clue to something else. His particular lady had ensconced herself on the gravelled roof of a University of Missouri building and there she sat unconcernedly on her "nest" even when the surface of the roof hit 61C (142F). Weller, noting that she seemed to head in different directions as the day wore on, rigged up a Rube Goldberg but effective sundial. He made hourly comparisons of the direction of sunlight determined by the shadow of the rod on the dial with the nighthawk's body axis. To his delight, he found a remarkably precise agreement between the angle of the sun and the bird's



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Mail all orders to: DESERT Magazine Box 1318 Palm Desert, Calif. 92260 position. Mrs. N., it seems, maintained the sun at her back throughout the day.

What does this mean to a desert-sitting nighthawk? First, crouched as she is, with the sun at her back, she cuts down on the amount of shadow she casts. This makes it tougher for aerial predators — hawks, eagles — to see her, for even her ground-matching feather-tones fail as camouflage if her body shape stands out against a dark shadow. Then, too, with her back to the sun, she's distributing the heat over her body more evenly and, since her head is pointed away, her mouth, where the all-important evaporative cooling takes place, is shaded.

Mrs. N. droops her long primary wing feathers below her tail, forming a shady canopy for eggs being incubated, or youngsters needing protection. Such umbrella work is highly effective, Weller finding that it lowered the temperature of the nest site as much as 15C day-times. Conversely, the warmth of the brooding nighthawk raised the nighttime temperature some five to six degrees. To desert dwellers facing day-night temperature extremes, this makes all the difference in family raising success.

Nighthawks settle for two in the family, the brace of speckled, lined, streaked and blotched eggs lost among the scattered pebbles and gravel. They are laid a day or two apart, Mrs. N. just shading the first one, finally getting down to the business of incubating only after the second is laid. Thus the two chicks will hatch about the same time. Weller, tired of the scientific wrangle over the question if nighthawks move their eggs, enlisted the cooperation of his roof-sitting lady to find out. He displaced one of her eggs about four inches

from the nest site. She poked and rolled it back with her breast and lower bill. He moved the egg 12 inches away. Too far for poking, so she straddled it and holding it with her flanks and breast feathers rolled it along ahead of her as she waddled back to the nest.

True to family tradition, the hatching nighthawks are off-beat from the start. They just don't fit into the either-or-else classification devised by scholars. Most young birds are either altricial like robins (arriving naked, blind and helpless and on their parents' hands until almost adults) or precocial like quails (downcovered with their eyes open, able to leave the nest shortly after hatching and to get at least a part of their own food). Nighthawks are 50-50. They are dependent on their parents for shelter and for their highly specialized food requirements, but they arrive covered with down, with open eyes and they can crawl and even toddle around at less than 24 hours of age.

The team of G. Pickwell and E. Smith, investigating how the lesser night-hawks made out with their family-raising problems in the desert, found that while Mr. N. may shirk the incubating duty, he certainly works hard after the chicks arrive.

Each day just before dusk, Mrs. N. zooms off, apparently leaving the chore of grocery shopping for the young up to Papa. Off he goes, wheeling, dipping, hawking low over the ground, swinging up high, changing course with splitsecond reaction. He hunts by sight in the dimming light, his eyes geared for low illumination and with remarkable ability to change focus rapidly. How else could he capture those insects so expert at employing their own evasive tactics? Tiny gnats to big moths are scooped up and swallowed, and his capacity is something grand, as many as 1000 individual insects of 50 different species being found in one nighthawk's stomach, for example.

With a cargo aboard, then, Mr. N. lands and waddles over to the youngsters. Thrusting his bill into the open mouth of the first, he regurgitates, neatly depositing a mish-mash of insects deep inside. Much jerking of heads both old and young takes place while the food is wadded in.

This one fed, Papa stuffs the second. Then, "talking" to the youngsters in soft



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tones, he lifts up his wings and they creep under him. Settling down, he broods them for five minutes or so, warming them up in the desert night, for their own temperature regulation system will not begin to function until they are some 12 days old, as Zoologist T.R. Howell's Louisiana study of the common nighthawk indicated.

What with Mr. N. fetching most of the groceries and shoving highly nutritious food into them, the youngsters are well stocked to get through the long hours of the coming day. Mrs. N., now on brooding duty again, is responsible for nest protection, apparently. Concealment by her own camouflaged self is probably sufficient most of the time, particularly since when she closes her eyes those target-shaped circles, so hard to disguise, disappear. But what happens if this doesn't work? Pickwell and Smith set about finding out.

When they approached on foot she rose up suddenly and went flopping away in the best theatrical injured wing act, recovering miraculously and taking flight when the "enemy" had been lured far enough away. But they got a very

different reception when they came crawling on their hands and knees. She sat still, waiting. Then, as they got too close, she suddenly opened her eyes very wide, spread her tail, raised her wings, lifted her throat feathers and let loose a deep throaty rasping hiss. A most inhospitable sight! Bound to chill all but the most stout-hearted predator.

The youngsters are models of deportment, minding their mothers instantly, according to her vocal instruction. Upon orders, eyes shut, their mixed-up feathers matching the background, they crouch motionless, not stirring until they get the maternal O.K. even if it takes as long as 15 minutes. If separated from her at even less than two days of age, they stagger over to her for concealment at her call. Things change, however, by the time they reach that magical 12-day-old figure, for they take on their own defense, acting, of all things, like young raptors! Reared back, wings hoisted and spread, bills open, big mouth agape, they look mighty mean.

Such warlike behavior by a really peaceful bird and at such an early age naturally causes raised eyebrows among scholars, particularly when they note that many small birds of other species become greatly alarmed when they see a nighthawk abroad by day, and react to it as they do to an owl. To be sure, nighthawks, with their cryptic coloring, soft feathers and big heads do resemble owls and their silent flight is much the same. But is there something more here — mimicry, or parallel adaptation, or a new type of behavior developing? A puzzler — another sample of what nighthawks are wont to hand to zoologists delving into their affairs.

At any rate, the owl-like defensive behavior of the youngsters contributes to their high survival rate, and helps insure species success.

What with excellent parental care and their own doughty natures, then, the young nighthawks can get right on with the business of growing up. They are able to fly short distances when only about 21 days old, flying and circling easily in another four. It's only a matter of time, then, before they are ready to sally forth on their own at dusk and, flying with their big mouths open, gobble up many a desert insect.



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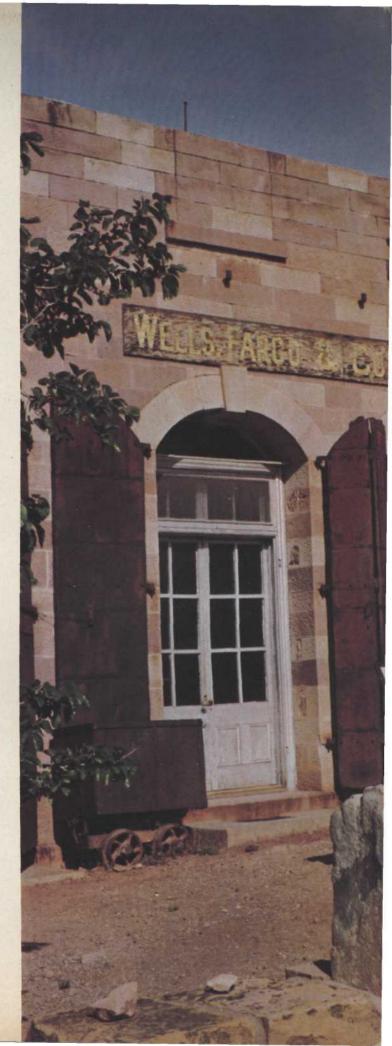
Silver Reef

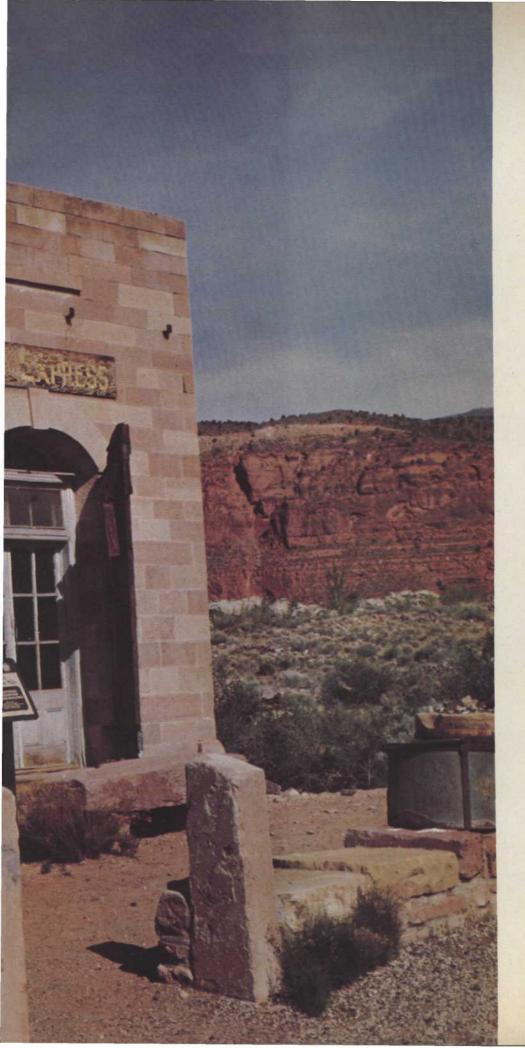
by C. WILLIAM HARRISON

HEN IT came to giving evaluation reports on the ore samples that were brought into his assay office in Pioche, Nevada during the middle 1880s by prospectors who were avidly probing the multi-hued hills and canyons in and around what is now the unforgettably spectacular Kodacolor vacationland of southwestern Utah, "Metaliferous" Murphy was not a man given to either circumspect judgments or verbal moderation.

He was, in other words, about as conservative in his assay reports to those hardbitten seekers of precious metals as a politician reviewing his personal and professional values before his constituants and the world at large during an election campaign.

Almost invariably when there was a fee involved, Murphy's enthusiasm over an ore sample could be depended upon to soar to extravagant heights, shouldering realities aside in favor of optimism expressed with boundless vigor and eloquence.



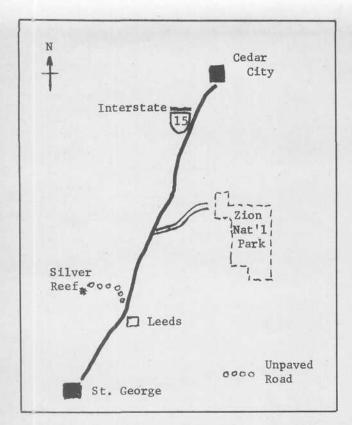


Built in 1877, the Wells Fargo
Express and Bank building, now
listed on the National Register as a
Utah Historical Site, was once the
repository for the more than \$10 millions
in silver bullion that were produced
by the Reef's numerous mines and mills.

But hopes carried too high are frequently the swiftest to come tumbling down, and the time inevitably came when the disenchantments of bitter reality began taking their toll on Metaliferous Murphy's misled clientele. Grizzled prospectors who had at first been eager believers were soon added to the growing list of rankled disbelievers. Too much, those disillusioned treasure seekers agreed among themselves, was just too damn much. And so they immediately began looking for a way to cut the truth-stretching assayer down to size and tie a can to his tail, once and for all.

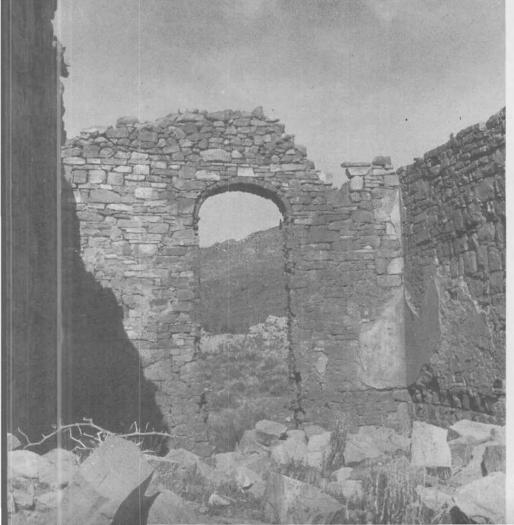
Their opportunity came one day, so the story goes, when a man showed up with a wagonload of wood which he hoped to sell to the merchants and homefolks of Pioche. With him the man also brought along a grindstone which he had made from sandstone blasted out of a ledge in the cactus and rabbit brush hills above the tiny Mormon settlement of Leeds, Utah.

The disgruntled prospectors perked up their conspiratorial eyes when they saw the grindstone. In those early times it was incontestable knowledge among learned geologists and unlettered one-



Right: Amid the ruins and rubble of the one-time boomtown, luxurious homes are being built for people who love the solitude and silence of the desert. Below: After the ravages of time and vandals, a few structures still remain.





blanket prospectors alike that silver ore could never — not ever — be found in sandstone or other sedimentary formations.

With that supposedly unimpeachable fact firmly rooted in their minds, Metaliferous Murphy's irate clients promptly pooled their meager funds and purchased the grindstone, after which they sledged it into bits and nominated one of their fellows to deliver the pulverized samples to Murphy for an assay.

In due time, the unsuspecting Murphy rendered his customary exuberant report. Never before had he seen ore so rich in silver, he informed the prospectors jubilantly. His enthusiasm unfurled and soared to ambrosial heights. Assayed at least 200 ounces to the ton, by glory! Maybe even more, if he ran a few additional tests. You've hit it rich this time, amigo! In case you don't realize it my friend, you have just now become a genuine financial tycoon! A real for sure millionaire by grabs!

According to legends now blurred by time and events, the wrathful prospectors immediately collared Metaliferous Murphy with a snugly fitting noose and unceremoniously hanged him. Another version is of a less lethal nature. It al-



leges that the assayer, infuriated by their refusal to give credibility to his report, traced the grindstone back to its source in a quarry in the foothills near Leeds and there made the revolutionary discovery that silver could — and in this instance genuinely did — exist in sandstone, thus shattering all previous assumptions on that subject.

At this late date, it is not likely that the actual facts concerning the original discovery of Silver Reef's hidden silver lode will ever be completely sorted out from the fanciful yearnings of oldtimers now long departed who devoutly believed that truth was worthwhile only when embellished with generous injections of undiluted fiction.

Whether Silver Reef's fabled sandstone vaults were first unlocked by the irrepressible Metaliferous Murphy . . . by the unidentifiable wanderer who is said to have noticed droplets of horn silver oozing from the sweltering pores of the sandstone lining of the fireplace in the equally unidentifiable house in Leeds where he had found refuge one bitterly cold winter night . . . or whether in reality credit for the discovery should be given to Spaniards of a much earlier era, as some graybearded oracles of southwestern Utah stubbornly maintain . . . quien sabe?

Who, indeed, can ever really know? And would such knowing ever really matter much to the average desert lover who finds far more lasting pleasure in the infinite panorama of its brawny and colorful past than in each small brush stroke that went into its creation?

At this late date, for most of us at least, the tracing down of precisely who and exactly what, how, when, and where, is often less important than seeking out and savoring the echoes of a past that still lives on in crumbling ruins, shadowy byways, and in the lingering litter of fascinating but frequently improbable legends that lend so much color and character to those vanishing places.

History is often made all the more tangy and tempting by the heady exaggerations and beguiling fantasies that were handed down through the mists of time by prospectors who left their lusty images on its now fading pages by jotting down their own personal footnotes, whether palpable or puckish, before moving on to the everlasting lodes and placer streams of another world.

Located some 18 super highway miles east of St. George, Utah, and just a hop-

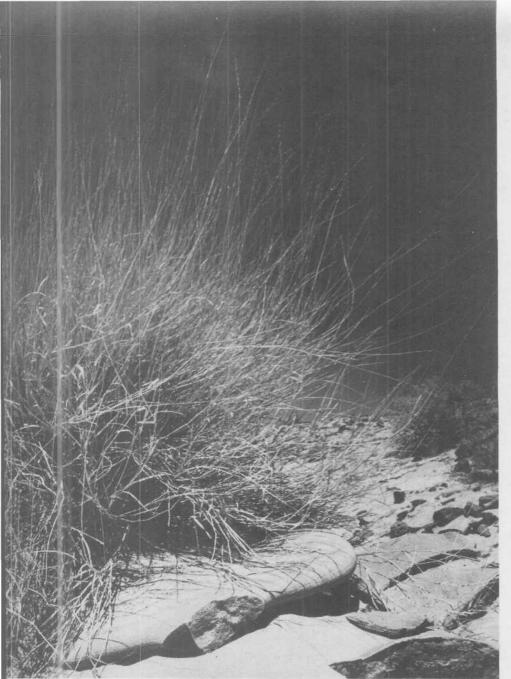
and-a-skip northwest of the historic little Mormon village of Leeds along an unpaved (the turn-off is well marked) but easily passable sideroad that is largely ignored nowadays by Interstate 15's speeding traffic, the century-old mining camp of Silver Reef went all the way when it became a ghost — almost, that is.

Still standing, alone and lonely now, is the one-time Wells Fargo Express and Bank building, with its somber sandstone walls scoured and tinged by a hundred years of wind and sun . . . with its tall, narrow doors and their heavy iron shutters gaping open, and nothing left to protect but the wasting litter of abandoned decades and a treasure in silver and gold that exists only in shadowed memories that linger in the emptiness within the building's dusty interior yault.

The winds of southwestern Utah's painted peaks and tinted deserts move restlessly through the brush and rubble of Tecumseh Ridge where Silver Reef once stood, and then across the rockstudded flat not far downslope to the east where its now vanished and all but forgotten neighboring camp, Bonanza City, burst into life in the middle 1870's, flourished briefly, and then swiftly faded into oblivion.

At times, the desert winds seem to shout at the many indignities that have befallen Silver Reef since its days of zest and glory . . . former dwellings and places of business ruthlessly ransacked for the reusable planks and fixtures that remained in them . . . the old Empire saloon and perhaps other venerable structures demolished and turned to rubble by seekers of cached treasures that existed only in irresistible rumors . . . and the two ancient cemeteries now lying ravaged and desecrated by unheeding vandals.

At other times, the desert winds seem less querulous, less reproachful of the follies and foibles of unthinking humans, remembering instead the more than \$10 million in silver bullion that were produced by the Reef's mines and mills during their heyday . . . remembering, too, the thousands of people who once toiled and trifled and laughed and loved on a sun-burnished ridge whose muted relics and ruins, once drawn into the mind and savored by the heart, are not soon forgotten.



The Spania Called Galleta still grows in Yuha desert near a campsite where Capt. Juan Bautista

Galleta still grows in Yuha desert near a campsite where Capt. Juan Bautista de Anza stopped with California's first colonists to come overland from Sonora, Mexico. Late-season portrait, when most of spikelets with seeds have dropped or been eaten by small animals.

IT WAS IN THE

of the Yuma Indians who also depended on this bean. While the men packed all the beans they could gather, the supply was soon depleted, and only galleta then was found along the old trail that led close to today's Mexican border. Captain Juan Bautista de Anza, from his reconnaissance trip the year before, knew where to find galleta, and would send men ahead to gather bundles of it.

The same thing was done by Lieutenant Colonel Pedro Fages, during his 1781-82 campaign which took him over the Camino and the Colorado Desert.

When American military men, after the Mexican War, were stationed in Arizona or were exploring for wagon routes, they noted that Indians used grass seeds, as well as other native plants. Captain Samuel P. Heintzelman, at the Yuma crossing in the early 1850s, reported that the natives there even planted wild grass for food. And in the same period, Lieutenant Amiel W. Whipple, approaching the Bill Williams River in early February, commented on the green grass "which the Mexicans call gallete." (From the Spanish period, the ap-

HE SILVERY GREEN clumps of galleta, lush and fresh after heavy summer downpours in parts of the Colorado and Mojave Deserts, add an unusual aspect to otherwise dry sandy areas. The spikes tipping the two- or three-foot-long stems may be purplish, whitish or pale green. Much of the time, and through all seasons some years, this perennial bunch grass will be golden or pale straw. But the thick rhizomes are there, waiting for rain.

This was the case in August 1977; within a month of the rains much of the Big Galleta (*Hilaria rigida*) showed almost complete new growth, the green shoots nearly hiding the pale remains of another year. Grain would be available in the several months ahead. We have

found heads with grain still intact in mid-January in central Nevada.

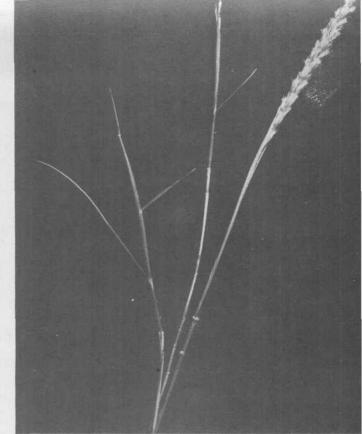
The fact that galleta is perennial, and may provide seeds at unexpected times. made it important not only to Indians but to early explorers and others who passed through the deserts. Galleta appears repeatedly in reports of the Anza expeditions of 1774-76. To those Franciscan padres, military men and colonists, coming from Sonora enroute to new homes in Alta California, this grass was essential. It is unlikely their animals could have survived without galleta. In stretches, along the Camino del Diablo in Arizona, galleta was the only thing they had. When they crossed the Colorado River, their horses and cattle gorged on mesquite-much to the alarm

rds it Galleta

Stems, or culms, of Hilaria [Galleta] are hollow, but closed at the nodes [rings]. Veining of the narrow leaf blade is parallel in pattern.

by LUCILE WEIGHT

photos by Harold O. Weight



MANNA DESERT

parent common name was 'galleta.' Americans unfamiliar with Spanish later spelled it in many ways, such as 'gietta,' or 'gayetta.')

In 1862, when Pauline Weaver heralded discovery of gold placers that started the La Paz rush, on the east side of the Colorado River, crowds of men and animals followed the Bradshaw Road, east from Dos Palmas in Coachella Valley. On that route galleta was the essential for freight teams and other animals. But travelers were warned by Pauline's son, Ben, to cut and bundle it, to shake out an insect (campo mocho) that could bring death to a horse.

Botanists in the Southwest last century discovered that galleta was a valuable range plant. Dr. George Vasey, an expert with the U. S. Department of Agriculture, in 1890 described three of the species and said galleta was about the only grass on the driest desert land. Exploring in the Death Valley area a year later, Frederick V. Coville, on another expedition sponsored by the USDA, noted occurrence of *H. mutica* and *H. rigida*, the latter around Fort Mohave,

Providence Mountains, west slopes of the Charlestons, in Pahrump Valley, northern Vegas Valley, down at Fort Yuma and in the Colorado Desert.

Farther south, across the Mexican border around Pinacate country, Sonoita River Valley and Laguna Prieta, Carl Lumholtz was exploring in 1910, making notes for his landmark books. Through most of his travels along Indian trails he found and depended on galleta for the horses. He found it green in January.

A Supplement Food

Seeds of grasses and flowers were vital supplements to more basic foods of desert Indians. When pinon crops were light, or where mesquite beans were not available, Indian women took up the slack by gathering more seeds. These not only were nutritious additives, they provided variety and flavor.

But the effort in finding enough to fill out a meal was tremendous. To make a pound, it takes a million seeds of some plant species. It would be rare to find enough of one kind within a home area to yield a worthwhile amount. Therefore many kinds were collected. But they had

to be processed and gathered by different methods. Many could be knocked into a gathering basket by use of a seed beater. But galleta heads could be stripped off by hand. Detaching the "husks" was more complicated, though, than the simpler singeing and tossing such seeds as ricegrass. Galleta heads in the early stage are soft and the "heart" is milky, so they were not easy to detach from the involucres; they also needed to be dried, for parching and grinding. But they could be added to stew or used for pudding or porridge, without all the intermediate steps. (In the immature state, the heads could be chewed for moisture and a bit of nourishment, by those following a long trail.)

Clues to the effort required to gather significant amounts of galleta seeds are found in records of the U. S. Department of Agriculture. Big Galleta, or *H. rigida*, produces the largest grains, about 33,000 seeds making a pound. Collecting this species is speedy compared with other Hilarias. Seeds of curly-mesquite, *H. belangeri*, are so small, 269,000 make up a pound, and tobosa, *H. mutica*, is



Above a dry lake near an Indian trail east of Twentynine Palms, California, galleta grows in thick band just below level of creosote which is on slightly stony slope.

almost as small, 267,000 making a pound. While *H. jamesii* will make up a pound with 159,000, this still is close to five times smaller than *H. rigida*, which is more familiar to us of the California deserts.

Several grasses were important to desert Indians, aside from galleta. The needle grama and desert needlegrass at times would cover great tracts. While the seeds are minute, a thick growth would make them worthwhile collecting. The Indian ricegrass was more restricted but was a valuable find.

Among the scores of other desert plants providing edible seeds are the saltbushes (Atriplex), buckwheats (Eriogonum), sages (Salvia), mustards and peppergrasses (Brassica, Ariabis, Lepidium), evening-primrose (Oenothera), blazingstars (Mentzelias), sunflowers (Helianthus, Encelia, Geraea), Amaranthus and cactus.

Tribal Uses

In commenting on the great importance of grama and galleta for the cattle and sheep industry, Kearney and Peebles, in their Arizona flora (a USDA publication), also state that seeds of many of their species furnished food for Arizona Indians.

The Yumas, as mentioned earlier, used both wild and cultivated grass seeds, in atole (gruel) or in cakes baked in ashes. Captain Heintzelman observed their pounding the seed in mesquite

wood mortars; adding water to the meal, kneading this, then ending with little sun-dried cakes. Galleta might well have been among the seeds in these "sun cakes."

Far to the northeast, up in Hopi country, galleta probably was not used for food, unless it was in the unrecorded past, for the Hopi are known as agriculturists from prehistoric times. However, *H. jamesii* has been used at least in two or three ways, according to a 1936 report by A. M. Stephen, in the Hopi Journal, Columbia University. This was one of the grasses used as fill for the coiled basketry made on Second Mesa. It also was used in making the artificial arm worn by manipulator of the serpent effigy, and it was attached to prayer sticks for deer and antelope.

In California, the Northern Paiutes of Owens Valley area used about every kind of wild seeds in making flour for gruel. Those with husks were rolled over lightly with a flat-bottomed mano, then in a basket-tray they were manipulated to separate the light pieces of husks and chaff. One can imagine the swirling and jerking motion as similar to the ones used by Sonorans in dry-washing gold placer in their wide pans or bateas. Next came parching with bits of hot coals, in a basket kept specially for this toasting; finally the grinding on a metate. Besides grass seeds, the day's gathering might include those of sunflowers, artemisia, evening-primose and many others growing in those Sierra or White Mountain foothills.

Shoshones in Utah and Nevada used galleta for food, according to a study by Julian H. Steward in the 1930s, published by the Bureau of Ethnology, Washington, D.C. The Northern Paiute around Winnemucca also ate galleta, which they called sobi, Steward said.

Over in Ruby Valley, while the Shoshone reportedly did not eat *H. Jamesii* (called by them *sonip*), they did eat a larger species of galleta. Perhaps this was *H. rigida*, which is recorded for Nevada and southern Utah.

Galleta and other grasses which had been important supplements to basic wild foods, Steward wrote, became depleted after the Mormons arrived in Utah in 1847. "... by 1862, only 15 years after the Mormons entered Utah, grazing had so reduced native seeds that the Indians were starving." Overlooked in this statement, apparently, was the

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Floodwaters of Carrizo and San Felipe creeks, in old Anza country, may wash away young Galleta and other seedlings, but underground rhizomes may survive and produce stout plants of Galleta.

impact made by the backwash from California gold fields, after discovery of silver on the Comstock, in the Reveille country (Austin), Treasure City, Candelaria. These mines for decades drew animals used in the mines and for freighting. Wild grass was cut and gathered to feed them. Cattle and sheep, brought as food supplies, grazed widely.

Whichever the greater force of the superimposed elements, Mormon or miner, Steward's comment about the displacement of edible grasses is interesting: "... Indian testimony indicates that many areas now occupied especially by rabbitbrush had much grass before introduction of cattle and sheep."

Where They Grow

Big Galleta, H. rigida, usually grows below 4000 feet, in sandy areas of creosote and Joshua Tree areas of the Colorado and Mojave Deserts; in five western Arizona counties, into Nevada and southern Utah. It occurs scattered or in thick-grown colonies. Called by some botanists "the most valuable forage grass in the desert," it serves another purpose aside from food. It is a sand stabilizer, helping to slow down and even stop the "migration" of dunes. In places it has established itself in sand-surfaced small dry lakes, and on slopes about dry lakes - as northeast and east of Twentynine Palms. This is in country where Indians lived from prehistoric times, not far from mesquite dunes which here provided the staple food. Up in Joshua Tree National

Monument it was valuable in the early days of cattle range, and is browsed by bighorn sheep and possibly deer. In places there it grows thickly in what appear to have been blow-sand areas.

H. jamesii grows at elevation 4000 to 7500 feet, especially in eastern Mojave pinon and juniper country, up around Death Valley and other Inyo County areas. Its stems are smoother than those of rigida.

H. Mutica is found, 2000 to 5600 feet, in southern Arizona and New Mexico, northern Mexico to Texas.

H. belangeri, 1500 to 6000 feet, on mesas and foothills of several Arizona counties, northern Mexico to Texas.

The genus Hilaria appears Spanish but it is a form taken from the name of a Frenchman, Augustin Francois Cesar Provensal de Saint-Hilaire, a botanist who explored Brazil in the first half of last century, and wrote about its flora in several volumes.

Galleta and other native plants that once were important to Indian menus were displaced by commercial flour and cereals and other foods, just as white people accepted prepared labor-saving foods, discarding the dishes that pioneers spent much of their time in preparing . . . and in one way this is fortunate. If such use had continued in the same proportion, given today's population, galleta as well as most other edible native plants probably would not be here for us to see even as curiosities.

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The Kofa's Lofty Legacy.. Palm

by JAMES WAGGONER

photos by Neil Zakar

Northern section of Kofa Mountains, 75 miles north of Yuma, Arizona.

THE KOFA
Mountains, in Yuma
County, Arizona, contain
a variety of interesting
places to visit. Situated
some 60 miles north of
Yuma and 35 miles south
of Quartzsite, they offer
all the quiet and solitude
a city dweller could ask
for on a weekend trip.

Slicing into the massive block of stone in the west face of the Kofa Mountains, Palm

Canyon divides what would otherwise be a solid wall of rock rising nearly 2,000 feet above the desert floor. We approached the Canyon turnoff from Highway 95, 35 miles south of Quartzsite, on what must

be one of the straightest stretches of highway in the country. The graded dirt road leading from the highway to the canyon is plainly marked by a sign which says simply, "Palm Canyon 9 miles," and points east

towards the strange-looking formation which hides Palm Canyon.

Camping facilities are non-existent, however, there are sites along the road leading from the highway to park a pickup

towards the

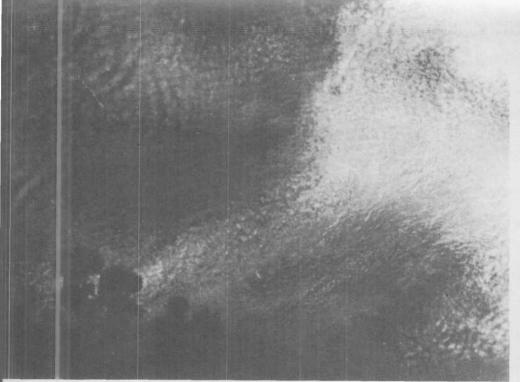


camper, and on one trip
we pulled a camping
trailer to within a mile of
the canyon. Turning off
the road onto a ridge
covered with "desert
pavement," which was
smoother than the
graded gravel road, we

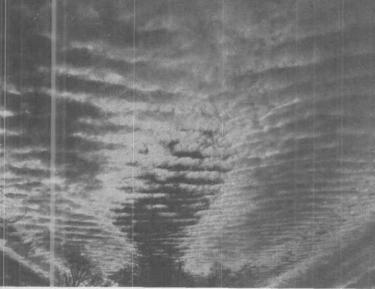
traveled for a few hundred feet and set up camp.

Palm Canyon lies at the end of the gravel road. Beyond the parking area a trail leads into the narrow canyon and the sheer cliffs rising on either side block the sun until about midday. The palms, for which the canyon is named, are hidden in a narrow cleft in the north side of the canyon wall. To see them at all you must hike up the canyon until you are

directly opposite this cleft. A more unlikely spot for the only wild palms growing in Arizona could not be imagined. The most probable explanation, perhaps, is that birds carried seeds to the



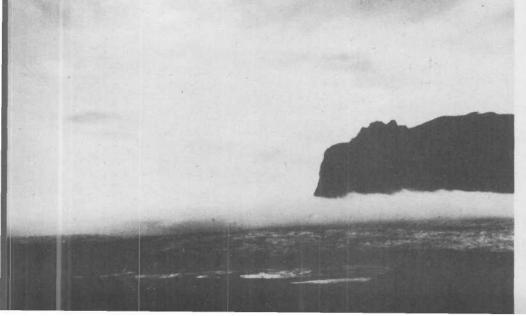
CIRROCUMULUS



ALTOCUMULUS

Cirrus clouds, Altocumulus clouds, and Cirrocumulus clouds generally foretell the coming of a storm. Cirrus clouds are ''mare's tails'' and the Altocumulus clouds are the ''mackerel sky'' clouds. Cumulus clouds are common after a rain storm and during fair weather. Cumulo-





do take place but rarely without some sort of warning.

Clouds and wind can give several hours to several days warning that a storm is coming. So, stopping your activities periodically during the day to check the wind and cloud formations can mean the difference between returning from an outing with some degree of comfort, or being trapped by a storm.

Clouds are one of the most reliable weather signs. Certain types of clouds almost always foretell changes in the weather. Others almost always assure pleasant weather.

Cumulus clouds are the soft, fluffylooking puffs commonly seen floating in the sky. They may be numerous but they are relatively small, usually occurring just after a storm or in fair weather.

On the other hand, in hot humid weather a similar cloud, the Cumulonimbus or thunderheads commonly form. These towering jagged clouds drop vast amounts of rain in a small area. Should they begin to form it's best to leave the area, preferably by a high ground route because flash floods are common after they drop their rain.

Cirrus clouds, sometimes called "mare's-tails," are fast-moving high altitude clouds composed of ice crystals. If a steady stream of these clouds are moving across the sky it's almost always an indication that rain clouds such as Nimbostratus or Altostratus clouds will follow.

Altocumulus clouds stretched across



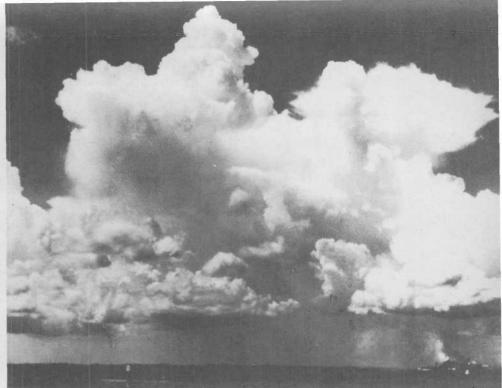
the sky is another sign of rain on the way. These are the clouds in the "mackerel sky" proverb.

Wind direction can often indicate pleasant or foul weather. A west wind generally brings fair weather, but wind whistling up from the south and east at the least usually means a change in weather and often a dramatic change for the worse. North winds on the other hand are legendary for bringing intense cold arctic air to the southern regions. In the summer these winds can push rainheavy clouds into an area, rapidly.

All the methods of predicting weather don't rely on the sense of sight or touch. Persons with arthritis or gout can often predict with reasonable accuracy if cloudy weather is going to bring rain or isn't. The pain in their joints increases as the low pressure of a storm front begins to move in. Odors are usually stronger before a storm because of lower air pressure, too.

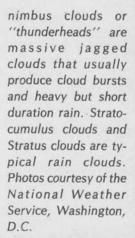
Of course none of these methods of predicting weather is perfect. It's possible to read the signs correctly, make the proper assumptions and still get caught in a storm. Or, just as bad, stay home when you could be out exploring, collecting or just enjoying the outdoors in the 'bad weather' that never came.

More often than not though, by studying the signs the day and night before an outing, and during the day, too, you'll be able to judge what's going to happen before it does and prepare accordingly.



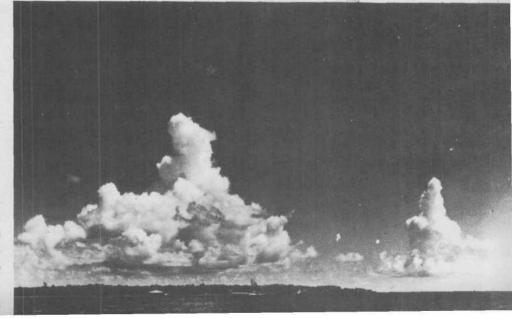
CUMULONIMBUS

CIRRUS

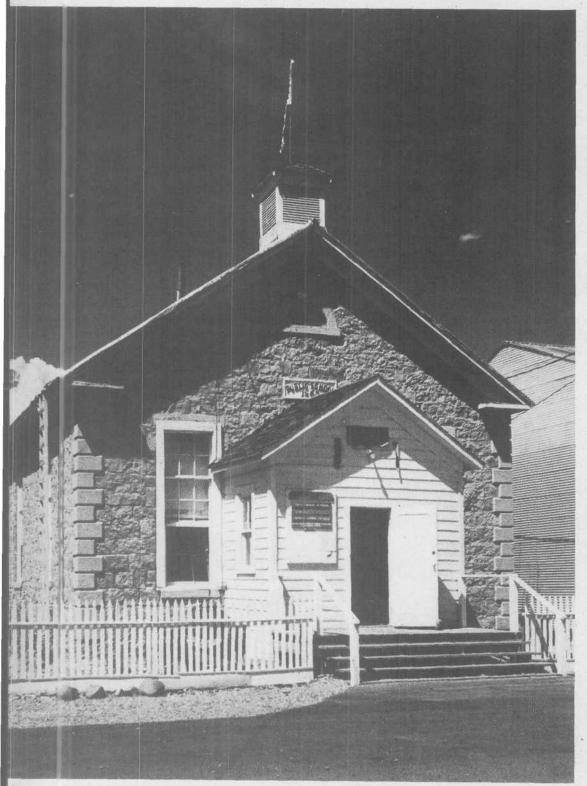




CUMULUS



Desert GHOSTS by HOWARD NEAL Dayton, Nevada



Old photographs of Dayton's school house, built in 1865, show it with an open bell tower, and without the small, white, addition to the front of the building.

Following the discovery of gold in California, an almost continuous stream of emigrants moved west across the American continent.

One of the most popular paths, one of the several routes known as the California Trail, took the pioneers west from the Great Salt Lake, through the burning deserts of eastern Nevada, to the banks of the Carson River. The wagon trains then followed the river to the lush Carson Valley and on through the treacherous passes of the Sierra Nevada Mountains to California's Mother Lode.

A number of trading posts were established along the trail. One of these, at the base of the eastern Sierra slope, was Genoa. It became Nevada's first settlement. Another was started as a single tent on the north shore of the Carson River. Its location was not far from the spot where gold was first discovered in what was then known as western Utah. It was later to be named Dayton.

It is said that Dayton's first permanent structure was built in 1850. In any event, in 1858 a small town was created. It was first known as Chinatown because of the many Chinese who had settled there to pan for gold in the nearby streams.

Chinatown was a small hamlet when the fabulous Comstock Lode was discovered in 1859. The discovery was less than 10 miles to the north. The impact was quick. The town was virtually abandoned as its population, almost as one, moved the few miles to the slopes of Mount Davidson.

The community survived, though, and grew again. The migration had reversed itself and Californians were moving east to the site of Nevada's great silver discovery. As it prospered, Dayton became its real, and final, name.

Dayton was in the right place. On the edge of a river, in a pleasant valley, it was in a good location to be a mill town. It was just a few miles from the Virginia City mines, and it was on the main freight route from the east to California.

Dayton became a transportation, commercial and milling center for the mines and miners of the Comstock.

A dozen mills were built at Dayton to process the silver and gold mined from the slopes of Mount Davidson. Millions of dollars worth of silver were shipped east and west from the small community on the Carson River. The town became the site of one of the relay stations of the famed, but short-lived, Pony Express, and in 1861 was named County Seat of Lyon County in the new Nevada Territory.

In 1865 Dayton's population reached its peak. Twenty-five hundred people called Dayton home.

It might be said that as the Comstock went, so went Dayton. As the 1860s came to a close mining activity on Mount Davidson had slowed, and Dayton's population had declined. Dayton, again though, found itself in the right place. The right place, this time, was near the lower end of the Sutro Tunnel. Adolph Sutro's engineering masterpiece was designed to drain the searing water from the depths of the Comstock mines to the lower elevation of the Carson River. Between 1872 and 1878 Dayton boomed again as the tunnel was under construction. But,



A ride on a fifty-year-old fire engine, which once served Silver City, Nevada, was one of the attractions during the 1977 celebration of Santa Maria Day at Dayton. Photographs by Howard Neal.

the tunnel came too late and neither the mines of Virginia City, nor Dayton, reached their former pinnacle.

Today, Dayton is once again a quiet hamlet of a few hundred people on the north bank of the Carson River. Mining activity continued until World War II, on a small scale, but the days of

gold and silver have passed. Still, though, many old buildings and ruins remain in what a sign on the outskirts of the community proclaim as "Nevada's Oldest Chost Town,"

Dayton is located on U.S.
Highway 50, 12 miles
northeast of Carson City,
Nevada.

The Dayton Cemetery is on a high hill overlooking the town and Nevada's Carson River. Not far away are Mount Davidson, Virginia City and the Comstock mines.

NO. 18 IN A SERIES ON CALIFORNIA PALM OASES

Four Palm Spring

by DICK BLOOMQUIST

ET IN A LITTLE stair-step gully and blanched sedimentary hills, Four Palm Spring is one of the largest waterholes in the arid Borrego Badlands. During wet years or after storms, this palm-fringed natural stairway must indeed be a pleasant spot, with a pool in every "tread" and a ribbon of falling water in every "riser." On my most recent visit I found water on two levels, most of it concentrated in a pool 10 feet long, three feet wide, and two feet deep at the gully's lower end. The ooze bordering the basin revealed scores of covote tracks, and droppings consisting wholly of Washingtonia berries indicated el coyote's high regard for the small, blackish fruit of the palm after it ripens and falls in the autumn months.

Six palms and one dead trunk stand by the brackish spring; four additional trees grow a short distance away to the south and west. The largest ones — up to 30 feet tall, with pitted, burnt, slightly bent trunks over two feet in diameter — bear the marks of wind and fire.

Sandstone concretions crowd many of the mud hills at Four Palm Spring, and on a previous trip I picked up a dusky chip of petrified wood nearby. Off to the northeast the Salton Sea spreads its cobalt waters.

The oasis is located on the eastern edge of the Borrego Badlands. According to the most restricted definition, the term "Badlands" should be applied only to the sunblasted hills and serpentine

Four Palm Spring in the Borrego Badlands. Pencil sketch by author.

arroyos in the vicinity of Font's Point several miles to the west in the Anza-Borrego Desert State Park; some maps call part of this region the "California Painted Desert." Most definitions, however, take in the bulk of the land bounded by the Santa Rosa Mountains on the

Mileage Log

- 0.0 Junction of State Highway 86 and Imperial County Road S22 (Borrego-Salton Seaway) on west side of Salton Sea. Drive west toward Borrego Springs on S22.
- Junction with North Marina Drive (graded dirt). Turn right.
- 4.2 Junction. Turn left on dirt road. Note: Road not maintained beyond this point. Depending on road conditions, drivers of passenger cars may wish to park here and walk the remaining distance to the palms.
- 4.5 Junction. Turn left on dirt road.
- 4.6 Junction. Turn right on dirt road.
 5.0 Four Palm Spring. Elevation ap-
- proximately 200 feet above sea level.

north, Borrego Valley on the west, Highway 86 on the east, and Highway 78 on the south.

Until recently Four Palm enjoyed greater seclusion than it does today. Only a few prospectors and desert rats,

drawn by its water and shade, knew it then — men like the late Henry E.W. Wilson, who roamed the Badlands off and on for more than half a century in quest of the fabled Lost Pegleg gold. Now a pole line skirts the oasis on its way to a microwave relay station on the Imperial-San Diego County line, and a dirt road reaches the waterhole from the south.

A few hundred yards north of Four Palm Spring, and well hidden by the cradling arms of a low mesa, there is another tiny grove, this one containing five Washingtonias. The lack of surface water and the many fallen trunks indicate that this cluster has seen better days. A final palm grows on the flatlands nearby, making a total of 16 living trees at Four Palm Spring and vicinity. The mesa just mentioned also provides a good vantage point from which to survey Palm Wash, less than one mile to the north.

From Four Palm Spring our desert trail will continue southward into the Badlands to Lone Palm in Arroyo Salado. Although, with a single tree, it is the smallest possible oasis, it nevertheless offers abundant geological and archeological interest.

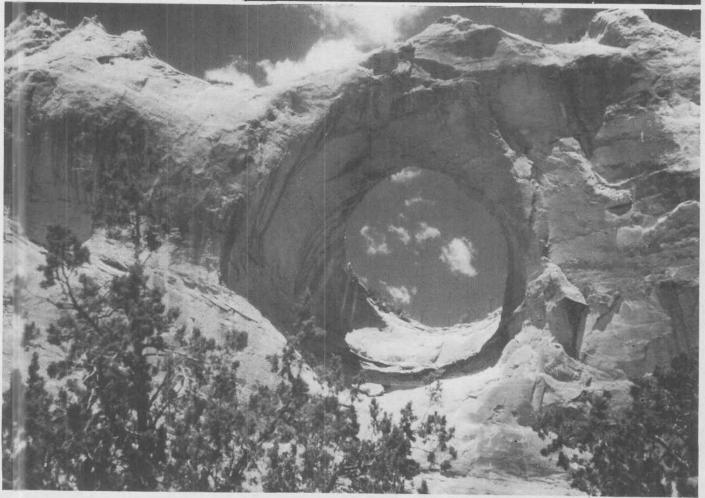
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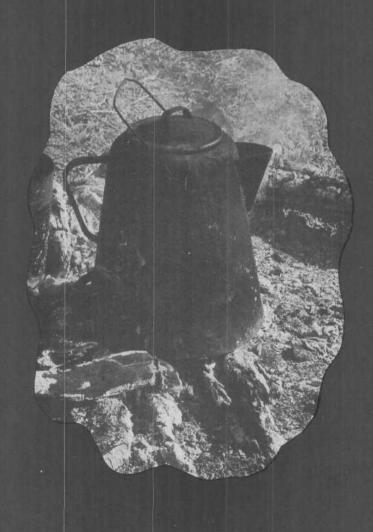
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What's Cooking On the Desert?



by STELLA HUGHES

Jerky!

HARQUI IS a Mexican word meaning dried meat. You probably won't find it in your modern Spanish dictionary, so don't bother to look. Anglos corrupted the word into jerky.

Jerked meat is simply strips of beef or venison dried in the sun or smoked. In the early days jerky was a staple article of diet among Mexicans, Indians and Texas settlers. Among Mexicans of the Southwest it was known as tasajo and carne asada or carne seca. The Indians used dried meat, suet and berries in making pemmican.

There are several ways of making jerky and some of them aren't practical and others downright silly. I'll dispense with all ways of drying meat except the one method best suited for our Southwest, and that is sun-drying. Sun-dried beef or venison is far superior to any ever smoked, or of that baked at very low heat in modern gas or electric ovens.

Any lean meat can be jerked. The leaner the better. However, if you do use meat with excess fat, simply trim it off. Fat will become rancid in a short while so is undesirable when making jerky.

Cut the meat in thin strips from six to twelve inches long. Little short pieces are hard to hang on wires to dry. The strips should be thin. About an inch wide by a half inch thick is fine.

Now, I've never read a recipe for making jerky that didn't say to cut meat with the grain. I've been guilty of the same fallacy, as in my book, Chuck Wagon Cookin', I gave instructions, " . . . cut with grain of meat, if possible." Well, cutting with grain of meat is a bunch of hooey! All the oldtimers I've guestioned about this shook their heads and said, "I always just cut 'er in strips. Didn't pay no mind which-a-way I was cuttin'. Just so I got 'er off the bone neat and clean. I expect some of it was cut with the grain, but the rest was likely cut slant-wise and cross-wise. Don't make no difference far as I'm concerned. It all dried and made derned good eatin'."

Just what I thought! I've made jerky by cutting as much of the meat against the grain as possible and found the re-

After the meat has been salted and seasoned to taste, the strips are hung on wires to dry.

sults easier to pound into flakes, easier to chew and a lot less stringy when added to beans or soup. So you just go right ahead and cut your meat into long strips and forget all about the grain.

Another thing, lots of the old recipes give instructions to dip the meat in brine. Some say hot and say say cold. Forget all about preparing any brine and simply salt the strips of meat as you cut them, using about one teaspoon of salt for one long strip. Lay the meat in a pan until you have all you intend to jerk. I like to use coarse ground black pepper on mine. Some like red chili powder on theirs, while others might add a little garlic salt. I've seen a few people use a drop or so of liquid "smoke" on their jerky. Do what ever you like, but salt is the only seasoning that is essential.

Drain any liquid from the pan, as salt draws the juices from the meat. Don't let the meat set for a long period of time, but hang on wires in the sun as soon as you can. A clothes line is a fine place to jerk meat, or any thin wire high enough so cats and dogs can't reach it. Just be sure it doesn't get wet. In the Southwest it's safe to dry jerky outside a good many months of the year, and summer and early fall are the best times. The meat will be jerked in about ten days, two weeks at the most, during hot weather.

If you are a worry-wart about flies, and afraid some of the black specks might not all be pepper, you better jerk your meat on a screened porch or on drying racks made of screen and covered with cheese cloth or mosquito netting. Old screen doors laid across saw-horses are good. However, the oldtimers knew what they were doing. Salt and pepper repels flies, and meat put in the full sun with plenty of air to help drying is best.

If it is during the rainy season and you want to play safe, drying meat in a shed or barn is fine. Under your carport or garage is O.K. Just remember cellars or basements are not at all suitable. Meat will mildew in a damp place and be ruined.

When the meat is as dark as old shoe



leather and all moisture has dried out, jerky is ready to use. Be sure to store in a dry place. Don't store in a container that might collect moisture. I like to store my jerky in flour sacks or old pillow cases hung from the rafter in our store room. Be sure mice, weevils or ants can't get to it. Jerked meat will keep indefinitely and age just doesn't affect it.

There are several ways to use jerky besides munching on it just the way it comes from the drying line. The most popular is jerky gravy.

Jerky Gravy (Serves 4)

Take about a quart of jerky and pound it with a wooden mallet or plain claw hammer. Use a hard surface such as an anvil or a good meat board. Pound into flakes, removing any rancid fat or stringy fibers. Then put the flaked jerky in hot fat in a heavy iron skillet or Dutch oven. Use several tablespoonfuls of bacon fryings. Let the meat brown in the fat for a few moments, then add flour. Stir to remove any lumps until it becomes a light brown, then add milk, stirring all the while. If too thick, add more milk. If too thin, you're in trouble. It's not easy to add more flour without making gravy lumpy. One way is to stir some flour in a cup of tepid water, just enough to make a thin paste. Add slowly to cooking gravy, stirring constantly.

You may need to add some more salt if jerky is not salty enough to flavor gravy. A dash of garlic salt may be to your liking. I find a small amount of 'Accent' (monosodium glutamate) adds zing to jerky gravy.

Serve jerky gravy on boiled potatoes in their jackets. It's good on mashed potatoes, fluffy boiled rice or hominy grits. But, probably the most popular way to serve jerky gravy is on hot sourdough or baking powder biscuits.

Pounded jerky flakes added to a pot of frijoles improves their flavor. Jerky added to boiled macaroni, chili and tomatoes is good camp fare when you're out of fresh meat.

One of the best meals I ever ate was prepared by an Apache cook on the fall roundup several years ago. Breakfast that morning, for me, had been a cup of coffee at 5 A.M., lunch was non-existent and it was sundown when we unsaddled and headed to the cook's fire. There he had a Dutch oven full of fried potatoes with lots of onions and diced green chili, along with plenty of pounded jerky flakes. He'd used just enough bacon grease to fry the potatoes golden crisp. Along with hot biscuits and coffee, so strong it snarled as it lurched from the pot, it made a meal long remembered by hungry riders.

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CALIFORNIA Five-in-One COOK BOOK by AI and Mildred Fischer. Recipes divided into Early California (Indian, Mexican, Mission, Gold Rush), California Fruits (Citrus, Dates, Avocados, etc.), California Products (Honey, Rice, Beef, etc.), Sea Foods and Wine Cooking. A total of 400 unusual recipes, spiral-bound, 142 pages, \$3.00.

BIRDS OF THE SOUTHWESTERN DESERTS by Gusse Thomas Smith. Thirty-one of the most commonly sighted birds of the Southwest are described and illustrated in 4-color artist drawings. Heavy paperback, 68 page, \$3.95.

20 MULE TEAM DAYS IN DEATH VALLEYBY Harold O. Weight. Specialists and critics praise this account of the great borax wagons of the 1880s, the drivers and mules, the trail to Mojave. Story of Borax Smith, Wm. T. Coleman, Death Valley pioneers, Harmony Borax Works. First-hand stories. Includes reprint of Henry G. Hawks' Report on Death Valley 1883. Paperback, 48 pages, 33 historic and modern photos, map. 5th ed. \$1.00.

HELLDORADOS, GHOSTS AND CAMPS OF THE OLD SOUTHWESTby Norman D. Wels.
The author takes you on a 7,000-mile tour of the Old Southwest, visiting some 67 ghost towns and abandoned mining camps, one never before mentioned in written history. 285 excellent photos. Hardcover, 320 pages, \$9.95.

MINES OF THE SAN GABRIELS by John W. Robinson. Various districts are described such as the San Fernando and the Santa Anita placers, the gold mines of the Soledad region and Lytle Creek, as well as the lode mines on the upper San Gabriel River and on the slopes of Mt. Baldy. The Los Angeles County ranks among the top gold producers in the state, all of which comes from the San Gabriels. Paperback, Illustrated, 72 pages, \$2.50.

THE LIVES OF DESERT ANIMALS IN JOSHUA TREE NATIONAL MONUMENT by Alden H. Miller and Robert C. Stebbins. An Indispensable source and guide for everyone with an interest in the desert life of Southern California. In addition to the actual faunal analysis of 141 resident animals of the desert, there are 149 illustrations including 74 photographs, 58 black and white drawings, 9 maps and 8 color plates. Hardcover, 452 pages, \$28.50.

CHUCK WAGON COOKIN' by Stella Hughes. Recipes collected straight from the source-cowboy cooks. Contains Mexican recipes, instructions for deep-pit barbecue and the art of using Dutch ovens for cooking everything from sour-dough biscuits to Son-of-Gun stew. Paperback, 170 pages, \$4.95.



TURQUOISE, The Gem of the Centuries by Oscar T. Branson. The most complete and lavishly illustrated all color book on turquoise. Identifies 43 localities, treated and stablized material, gives brief history of the gem and details the individual techniques of the Southwest Indian Tribes. Heavy paperback, large format, 68 pages, \$7.95.

TRAVELS IN THE INTERIOR OF MEXICO: In Baja California and Around the Sea of Cortes, 1825, 1826, 1827 and 1828, by Lt. R. W. H. Hardy, R.N. An oldie but a goodie, an alltime classic for the library of any Baja buff, written as a journal by one of the first non-Spanish visitors to this wild region. A faithful reprint with all the flavor of the original 150-year-old English edition. Hardy supplied many of the place names still used in this area. Hardcover, an excellent map, 558 pages, \$20.00.

THE ROCKS BEGIN TO SPEAK by LaVan Martineau. The author tells how his interest in rock writing led to years of study and how he has learned that many - especially the complex petroglyphs - are historical accounts of actual events. Hardcover, well illustrated, glossary, bibliography, 210 pages, \$10.95.

TO HELL ON WHEELS by Alan H. Slebert. A must for every desert traveler, this is not just another survival book, it is a manual of mobility for the recreational vehicle driver who is looking for something more than the organized campground. Highly recommended for both the newcomer and old-timer. Paperback, 64 pages, well illustrated, \$2.95.

CAMP AND CAMINO IN LOWER CALIFOR-NIA: Explorations and Adventures on the Baja; 1908-1910, by Arthur W. North. A handsome new edition of an old favorite of many Baja California travelers, with new illustrations and all of the author's original photographs. A classic account of land and sea travels in a raw territory written after travels 70 years ago. Modern writers use North as a starting place. Hardcover, 130 photographs, 346 pages, \$20.00.

NEVADA GHOST TOWNS AND MINING CAMPS by Stanley W. Paher. Covering all of Nevada's 17 counties, Paher has documented 575 mining camps, many of which have been erased from the earth. The book contains the greatest and most complete collection of historic photographs of Nevada ever published. This, coupled with his excellent writing and map, creates a book of lasting value. Large format, 700 photographs, hardcover, 492 pages, \$17.50.

GHOSTS OF THE ADOBE WALLS by Nell Murbarger. A reprint of Arizona history by one of the desert's outstanding reporters. Old mines, towns, army posts, people and areas are reborn into vivid life by an expert writer who knows her areas and subjects. With handy locator maps and many photographs. Paperback, \$7.95.

SOVEREIGNS OF THE SAGE by Nell Murbarger. A collection of previously told tales about the people and the places of the great American Southwest by the original author, a longtime reporter of the desert. Many photographs, some of them now lost, several excellent Norton Allen Maps. Paperback, \$7.95.

NAVAJO RUGS, Past, Present and Future by Gilbert S. Maxwell. Concerns the history, legends and descriptions of Navajo rugs. Full color photographs. Paperback, \$3.50.

WILD BROTHERS OF THE INDIANS by Alice Wesche. Beautifully illustrated story for children about the Mimbres potters of New Mexico. Included are instructions for drawing the distinctive designs of the Mimbrenos which adults, too, will want to use for their crafts. Large format, paperback, \$4.95.

THE CREATIVE OJO BOOK by Diane Thomas. Instructions for making the colorful yarn talismans originally made by Pueblo and Mexican Indians. Included are directions for wall-hung ojos, necklaces, mobiles and gift-wrap tie-ons. Well illustrated with 4-color photographs, 52 pages, paperback, \$2.95.

BAJA CALIFORNIA GUIDEBOOK by Walt Wheelock and Howard E. Gulick, formerly Gerhard and Gulick's Lower California Guidebook. This totally revised fifth edition is up-tothe-minute for the Transpeninsular paved highway, with new detailed mileages and descriptive text. Corrections and additions are shown for the many side roads. ORV routes, trails and littleknown byways to desert, mountain, beach and bay recesses. Folding route maps are color and newly revised for current accuracy. Indispensable reference guide, hardcover, \$10.50.

THE NORTH AMERICAN DESERTS by Edmund C. Jaeger. A long-time authority on all phases of desert areas and life. Dr. Jaeger's book on the North American Deserts should be carried wherever you travel. It not only describes each of the individual desert areas, but has illustrated sections on desert insects, reptiles, birds, mammals and plants. 315 pages, illustrated, photographs, line drawings and maps. Hardcover, \$7.95.

WM. B. ROOD & RANCHO DE LOS YUMAS by Harold and Lucile Weight. For the first time the three adventurous lives of this man from Illinois are correlated. He was a Death Valley 49er Jayhawker; he mined in California and ranched south of Tucson; became a legendary figure after his stand-off of a circle of Apaches. He finally built his adobe on the huge Colorado River ranch. Photos, maps, portrait. Paperback, \$1.50.

Letters to the Editor

Letters requesting answers must include stamped self-addressed envelope

Tortoise Missed . . .

My compliments on the interesting and well-written article, Red Mountain and the "Desert Awareness" Event by Pat Holmes, in the March '78 issue. It is extremely heartening to learn that a growing number of people are becoming concerned with the preservation of the desert areas and their threatened wildlife populations, and that they are beginning to realize that the desert is not a barren wasteland that's as good a place as any to dump their trash.

However, I was surprised that in the otherwise excellent article the author omitted the desert tortoise—certainly plentiful throughout the area—from her carefully compiled list of animal inhabitants. There is no creature more in need of all the help we can give it than our gentle, lumbering California Sate Reptile, and the recently established Desert Tortoise Preserve or Natural Area, which offers protection only in their prime habitat, is just a few miles from the locale of the article! Of course, I realize that the expedition took place in November, when there are no tortoises visible because of their being in hibernation at that time.

Aside from that, I was glad to see a very important point stressed in the article; one that is frequently overlooked. As the author implies, it is a sad irony that the very act of riding (or even walking) around the desert to investigate the damage can result in causing still more damage to the wildlife habitat! Even when no creatures were encountered, burrows and nests can get crushed and the plants that the animals need for food can get trampled to death, unless extreme care is exercised.

It is to be hoped that the many well-meaning individuals and groups will realize all this in time and restrain their activities accordingly, so that their noble and vital purpose will truly be accomplished.

Thank you for this opportunity to comment.
GLORIA NOWAK,
Ridgecrest, California.

Desert Ranks High . . .

Your magazine ranks highly with our family, as we like it very much. Arizona Highways, National Geographic, Reader's Digest—and your magazine—knock us out everytime. Keep up the good work.

MR. & MRS. R. KRUM, Northfield, Illinois.

Calendar of Events

This column is a public service and there is no charge for listing your event or meeting—so take advantage of the space by sending in your announcement. We must receive the information at least three months prior to the event.

MAY 6 & 7, 13th Annual Antique Bottles and Collectables Show and Sale, Scottish Rite Memorial Center, Interstate 8—Mission Valley, San Diego, California. Admission \$1.00. For information, write Shirley Toynton, 9220 Maranda Dr., Santee, Calif. 92071.

May 6 & 7. Delvers Gem and Mineral Society's 28th Annual Show. Cerritos College Student Center, 11110 Alondra Blvd., Norwalk, California.

MAY 6 & 7, 18th Annual Flower Show of the Yucca Valley Garden Club, Yucca Valley Community Center, 57090 29 Palms Highway, Yucca Valley, California.

MAY 6 & 7, Canyon City Lapidary Society, El Monte Gem and Mineral Club, Inc., La Puente Gem and Mineral Club, "Million \$ Gem Show." Building 22, Los Angeles County Fairgrounds, Pomona, California.

MAY 13 & 14, Searchers Gem and Mineral Society, Inc., 19th Annual Show, "Searchers Gem Roundup." Retail Clerks Auditorium, 8550 Stanton Ave., Buena Park, California. Free admission and parking.

MAY 20 & 21, Yucaipa Valley Gem & Mineral Society's 13th annual show, "The Rockhound's Delight in '78," Yucaipa Valley Community Center, First Street & Avenue B, Yucaipa, Calif. Free admission and parking.

MAY 20 & 21, Norwalk Rockhounds's 14th annual Gem and Mineral Show for 1978, Masonic Lodge, 12345 Rosecrans, Norwalk, Calif. Free parking and admission.

MAY 20 & 21, May Festival of Gems sponsored by the Glendale Lapidary and Gem Society, Glendale Civic Auditorium, 1401 N. Verdugo Rd., Glendale, Calif. Admission 50c; parking free.

MAY 20 & 21, World of Gems presented by Berkeley Gem & Mineral Society, Contra Costa College Student Activities Bldg., San Pablo, Calif. Admission, adults \$1.00; children (6-12) 25c. Free parking.

MAY 25, "Symphony in Flowers," sponsored by the Reno- Sparks Garden Clubs, Centennial Coliseum, Reno, Nv. Admission free.

MAY 26-28, Gem and Mineral Show sponsored by the Wasatch Gem Society, National Guard Armory, 5189 South State Street, Murray, Utah. Chairman: Royce S. Hutchinson, 9482 S. 220 E., Sandy, Utah 84070.

MAY 27 & 28, Verde Valley Gem and Mineral Show, Mingus Union High School, Cottonwood, Arizona. Sponsored by Oak Creek Gem and Mineral Society of Sedona, Arizona and Mingus Gem and Mineral Club of Cottonwood, Arizona.

MAY 27 & 28, Mission Peak Gem and Mineral Society will hold its 12th Annual Show. Irvington High School, Blacow Rd., at Grimmer Blvd., Fremont, Calif. Dealer spaces filled.

JUNE 17 & 18, Lassen Rocks and Minerals Society's 6th Annual Show, Jensen Hall, Lassen County Fairgrounds, Susanville, Calif. Exhibits, Dealers. Tailgating, space for trailers and campers (no hookups). Free admission to exhibits.

JUNE 3 & 4, Marin Mineral Society's 9th Annual Show, "Silver Jubilee of Gems," celebrating 25th Anniversary. Marin Civic Center Exhibition Building, San Rafael, Calif.

JULY 15 & 16, Reno Gem and Mineral Society's Annual Show, Centennial Coliseum, 4590 S. Virginia St., Reno, Nevada.

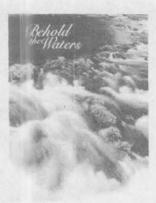
SEPTEMBER 23 & 24, Centinela Valley Gem and Mineral Club's "Harvest of Gems" show, Hawthorne Memorial Center, El Segundo Blvd., and Prairie Ave., Hawthorne, Calif. Dealers, displays, demonstrations, prizes. Ample free parking.

SEPTEMBER 23 & 24, 38th Annual Show of the Los Angeles Lapidary Society, "March of Gems" at the Brentwood Youth House, 731 South Bundy, south of San Vicente. Dealer space filled.

SEPTEMBER 30-OCTOBER 1, "Nature's Jewel Box," sponsored by the Napa Valley Rock & Gem Club, Inc., Napa Town and Country Fairgrounds, 575 Third st., Napa, Calif. Dealers, demonstrations, drawings. Donation 50c. Easy parking and camping facilities on the grounds.

OCTOBER 14-22, 3rd Annual Gem and Mineral and Handcraft Hobby Show, Sportsman's Club of Joshua Tree, 6225 Sunburst, Joshua Tree, California. For information, write P. O. Box 153, Joshua Tree, Calif. 92252.

NOVEMBER 18 & 19, "Earth's Treasures, sponsored by the Nevada County Gem and Mineral Society, Veteran's Memorial Building, 255 So. Auburn, Grass Valley, Calif. Exhibits, dealers sales, special displays. Dealer space filled. Free admission and parking.



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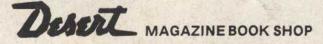


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